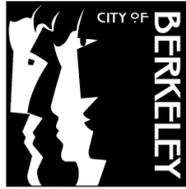


**REVISED AGENDA
(ADDED PRESENTATION)**



**BERKELEY CITY COUNCIL FACILITIES, INFRASTRUCTURE,
TRANSPORTATION, ENVIRONMENT & SUSTAINABILITY COMMITTEE
REGULAR MEETING**

BERKELEY CITY COUNCIL SPECIAL MEETING

**Thursday, April 4, 2019
2:00 PM**

2180 Milvia Street, 1st Floor - Cypress Room

Committee Members:

Councilmembers Cheryl Davila, Kate Harrison, and Rigel Robinson

AGENDA

Roll Call

Public Comment on Non-Agenda Matters

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes for Approval - March 21, 2019

Committee Action Items

The public may comment on each item listed on the agenda for action as the item is taken up. The Chair will determine the number of persons interested in speaking on each item. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Chair may limit the public comment for all speakers to one minute per speaker. Speakers are permitted to yield their time to one other speaker, however no one speaker shall have more than four minutes.

Following review and discussion of the items listed below, the Committee may continue an item to a future committee meeting, or refer the item to the City Council.

Committee Action Items

A. Presentation on Animal Farming

2a. Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Properties From: Community Environmental Advisory Commission (*Contains supplemental materials*)

Referred: January 22, 2019

Due: June 11, 2019

Recommendation: Since the drought-storm-flooding cycle is predicted to get worse, refer to the City Manager to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period. The City Manager and staff should consider the following: - Comply beyond the State and Alameda County current requirements; -Encourage the treating and detaining of runoff up to approximately the 85th per-centile of water deposited in a 24-hour period; -Establish site design measures that include minimizing impervious surfaces; -Require homeowners to include flooding offsets in preparing properties for sale; - Offer option(s) for property owners to fund in-lieu centralized off-site storm-water retention facilities that would hold an equivalent volume of runoff; -Require abatements for newly paved areas over a specific size; -Make exceptions for properties that offer significantly below-market rent or sale prices; -Authorize a fee for all new construction or for title transfer to cover the cost of re-quired compliance inspections. -Incorporate these measures for private property with similar measures for Public Works, while coordinating with EBMUD, BUSD, UCB and LBNL.

Financial Implications: See report

Contact: Viviana Garcia, Commission Secretary, 981-7460

2b. Companion Report to Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Properties

From: City Manager

Referred: January 22, 2019

Due: June 11, 2019

Recommendation: Express appreciation for the intent of the Community Environmental Advisory Commission (CEAC) recommendation to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period, and allow staff to continue existing efforts to implement Municipal Regional Stormwater Permit regulations in coordination with the 14 other local governments and agencies that participate in the Alameda Countywide Clean Water Program.

Financial Implications: See report

Contact: Timothy Burroughs, Planning and Development, 981-7400; Phillip Harrington, Public Works, 981-6300

Committee Action Items

3. Considering Multi-year Bidding Processes for Street Paving

From: Mayor Arreguin, Councilmembers Hahn, Harrison and Davila

Referred: March 11, 2019

Due: September 15, 2019

Recommendation: 1. Restate the recommendation approved at the December 11, 2018 Council meeting to create a two-year bidding process for street paving to realize savings by (a) reducing by 50% City staff time devoted to bidding and contracting processes over each two year period and (b) benefitting from reduced pricing which may be available for larger contracts that offer greater economies of scale and reduce contractors' bidding and contracting costs.

2. Short-term referral to the City Manager to explore the possibility, feasibility, costs, and benefits of bidding in increments of up to 5 years to encompass entire 5-year paving plans, or other ideas to more rationally and cost-effectively align the paving plan with budget cycles and reduce costs associated with frequent bid cycles for relatively small contracts.

Financial Implications: See report

Contact: Jesse Arreguin, Mayor, 981-7100

Unscheduled Items

These items are not scheduled for discussion or action at this meeting. The Committee may schedule these items to the Action Calendar of a future Committee meeting.

4. Adopt an Ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code Prohibiting Natural Gas Infrastructure in New Buildings *(Item contains revised materials)*

From: Councilmembers Harrison, Davila, Bartlett and Hahn

Referred: February 25, 2019

Due: July 15, 2019

Recommendation: Adopt an ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code (BMC) prohibiting natural gas infrastructure in new buildings with an effective date of [].

Financial Implications: See report

Contact: Kate Harrison, Councilmember, District 4, 981-7140

Adjournment

~~~~~  
*This is a meeting of the Berkeley City Council Facilities, Infrastructure, Transportation, Environment & Sustainability Committee. Since a quorum of the Berkeley City Council may actually be present to discuss matters with the Council Facilities, Infrastructure, Transportation, Environment & Sustainability Committee, this meeting is being noticed as a special meeting of the Berkeley City Council as well as a Council Facilities, Infrastructure, Transportation, Environment & Sustainability Committee meeting.*

*Written communications addressed to the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee and submitted to the City Clerk Department will be distributed to the Committee prior to the meeting.*

*This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Mark Numainville, City Clerk, 981-6900.*



**COMMUNICATION ACCESS INFORMATION:**

This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6418 (V) or 981-6347 (TDD) at least three business days before the meeting date. Attendees at public meetings are reminded that other attendees may be sensitive to various scents, whether natural or manufactured, in products and materials. Please help the City respect these needs.

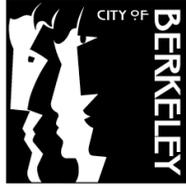
~~~~~  
I hereby certify that the agenda for this special meeting of the Berkeley City Council was posted at the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way, as well as on the City's website, on April 1, 2019.

A handwritten signature in black ink that reads "Mark Numainville".

Mark Numainville, City Clerk

Communications

Communications submitted to City Council Policy Committees are on file in the City Clerk Department at 2180 Milvia Street, 1st Floor, Berkeley, CA.



**BERKELEY CITY COUNCIL FACILITIES, INFRASTRUCTURE,
TRANSPORTATION, ENVIRONMENT & SUSTAINABILITY COMMITTEE
REGULAR MEETING**

BERKELEY CITY COUNCIL SPECIAL MEETING

**Thursday, April 04, 2019
2:00 PM**

2180 Milvia Street, 1st Floor - Cypress Room

Committee Members:

Councilmembers Cheryl Davila, Kate Harrison, and Rigel Robinson

AGENDA

Roll Call

Public Comment on Non-Agenda Matters

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes for Approval - March 21, 2019

Committee Action Items

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Following review and discussion of the items listed below, the Committee may continue an item to a future committee meeting, or refer the item to the City Council.

Committee Action Items

- 2a. Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Properties**
From: Community Environmental Advisory Commission (*Contains supplemental materials*)

Referred: January 22, 2019

Due: June 11, 2019

Recommendation: Since the drought-storm-flooding cycle is predicted to get worse, refer to the City Manager to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period. The City Manager and staff should consider the following: - Comply beyond the State and Alameda County current requirements; -Encourage the treating and detaining of runoff up to approximately the 85th per-centile of water deposited in a 24-hour period; -Establish site design measures that include minimizing impervious surfaces; -Require homeowners to include flooding offsets in preparing properties for sale; - Offer option(s) for property owners to fund in-lieu centralized off-site storm-water retention facilities that would hold an equivalent volume of runoff; -Require abatements for newly paved areas over a specific size; -Make exceptions for properties that offer significantly below-market rent or sale prices; -Authorize a fee for all new construction or for title transfer to cover the cost of required compliance inspections. -Incorporate these measures for private property with similar measures for Public Works, while coordinating with EBMUD, BUSD, UCB and LBNL.

Financial Implications: See report

Contact: Viviana Garcia, Commission Secretary, 981-7460

- 2b. Companion Report to Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Properties**

From: City Manager

Referred: January 22, 2019

Due: June 11, 2019

Recommendation: Express appreciation for the intent of the Community Environmental Advisory Commission (CEAC) recommendation to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period, and allow staff to continue existing efforts to implement Municipal Regional Stormwater Permit regulations in coordination with the 14 other local governments and agencies that participate in the Alameda Countywide Clean Water Program.

Financial Implications: See report

Contact: Timothy Burroughs, Planning and Development, 981-7400; Phillip Harrington, Public Works, 981-6300

Committee Action Items

3. **Considering Multi-year Bidding Processes for Street Paving**
From: Mayor Arreguin, Councilmembers Hahn, Harrison and Davila
Referred: March 11, 2019
Due: September 15, 2019
Recommendation: 1. Restate the recommendation approved at the December 11, 2018 Council meeting to create a two-year bidding process for street paving to realize savings by (a) reducing by 50% City staff time devoted to bidding and contracting processes over each two year period and (b) benefitting from reduced pricing which may be available for larger contracts that offer greater economies of scale and reduce contractors' bidding and contracting costs.
2. Short-term referral to the City Manager to explore the possibility, feasibility, costs, and benefits of bidding in increments of up to 5 years to encompass entire 5-year paving plans, or other ideas to more rationally and cost-effectively align the paving plan with budget cycles and reduce costs associated with frequent bid cycles for relatively small contracts.
Financial Implications: See report
Contact: Jesse Arreguin, Mayor, 981-7100

Unscheduled Items

These items are not scheduled for discussion or action at this meeting. The Committee may schedule these items to the Action Calendar of a future Committee meeting.

4. **Adopt an Ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code Prohibiting Natural Gas Infrastructure in New Buildings** (*Item contains revised materials*)
From: Councilmembers Harrison, Davila, Bartlett and Hahn
Referred: February 25, 2019
Due: July 15, 2019
Recommendation: Adopt an ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code (BMC) prohibiting natural gas infrastructure in new buildings with an effective date of [].
Financial Implications: See report
Contact: Kate Harrison, Councilmember, District 4, 981-7140

Adjournment

~~~~~  
*This is a meeting of the Berkeley City Council Facilities, Infrastructure, Transportation, Environment & Sustainability Committee. Since a quorum of the Berkeley City Council may actually be present to discuss matters with the Council Facilities, Infrastructure, Transportation, Environment & Sustainability Committee, this meeting is being noticed as a special meeting of the Berkeley City Council as well as a Council Facilities, Infrastructure, Transportation, Environment & Sustainability Committee meeting.*

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~~~~~  
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A handwritten signature in black ink that reads "Mark Numainville".

Mark Numainville, City Clerk

Communications

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**BERKELEY CITY COUNCIL FACILITIES, INFRASTRUCTURE,
TRANSPORTATION, ENVIRONMENT & SUSTAINABILITY COMMITTEE
REGULAR MEETING MINUTES**

BERKELEY CITY COUNCIL SPECIAL MEETING MINUTES

**Thursday, March 21, 2019
2:00 PM**

2180 Milvia Street, 6th Floor - Redwood Room

Committee Members:

Councilmembers Cheryl Davila, Kate Harrison, and Rigel Robinson

Roll Call: 2:04 p.m.

Present: Harrison, Robinson

Absent: Davila

Policy Committee Procedures

Action: M/S/C (Robinson/Harrison) to adopt the Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee Procedures.

Vote: Ayes – Harrison, Robinson; Noes – None; Abstain – None; Absent – Davila.

Public Comment on Non-Agenda Matters – 2 speakers

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes for Approval – March 7, 2019

Action: M/S/C (Robinson/Harrison) to approve the minutes from March 7, 2019.

Vote: Ayes – Harrison, Robinson; Noes – None; Abstain – None; Absent – Davila.

Committee Action Items

The public may comment on each item listed on the agenda for action as the item is taken up. The Chair will determine the number of persons interested in speaking on each item. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Chair may limit the public comment for all speakers to one minute per speaker. Speakers are permitted to yield their time to one other speaker, however no one speaker shall have more than four minutes.

Following review and discussion of the items listed below, the Committee may continue an item to a future committee meeting, or refer the item to the City Council.

Committee Action Items

2a. Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Properties *(Contains supplemental materials)*

From: Community Environmental Advisory Commission

Referred: January 22, 2019

Due: June 11, 2019

Recommendation: Since the drought-storm-flooding cycle is predicted to get worse, refer to the City Manager to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period. The City Manager and staff should consider the following: - Comply beyond the State and Alameda County current requirements; -Encourage the treating and detaining of runoff up to approximately the 85th per-centile of water deposited in a 24-hour period; -Establish site design measures that include minimizing impervious surfaces; -Require homeowners to include flooding offsets in preparing properties for sale; - Offer option(s) for property owners to fund in-lieu centralized off-site storm-water retention facilities that would hold an equivalent volume of runoff; -Require abatements for newly paved areas over a specific size; -Make exceptions for properties that offer significantly below-market rent or sale prices; -Authorize a fee for all new construction or for title transfer to cover the cost of re-quired compliance inspections. -Incorporate these measures for private property with similar measures for Public Works, while coordinating with EBMUD, BUSD, UCB and LBNL.

Financial Implications: See report

Contact: Viviana Garcia, Commission Secretary, 981-7460

2b. Companion Report to Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Properties

From: City Manager

Referred: January 22, 2019

Due: June 11, 2019

Recommendation: Express appreciation for the intent of the Community Environmental Advisory Commission (CEAC) recommendation to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period, and allow staff to continue existing efforts to implement Municipal Regional Stormwater Permit regulations in coordination with the 14 other local governments and agencies that participate in the Alameda Countywide Clean Water Program.

Financial Implications: See report

Contact: Timothy Burroughs, Planning and Development, 981-7400; Phillip Harrington, Public Works, 981-6300

Action: 3 speakers. Discussion held. The Committee requested that staff return with the following information:

1. What does the City currently require at sale of property?
2. Provide previously requested information in different groupings: a) new build b) sale of property c) existing properties

Committee Action Items

3. Estimated costs for green stormwater techniques

Item continued to the next meeting.

3. Adopt an Ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code Prohibiting Natural Gas Infrastructure in New Buildings *(Item contains revised materials)*

From: Councilmembers Harrison, Davila, Bartlett, and Hahn

Referred: February 25, 2019

Due: July 15, 2019

Recommendation: Adopt an ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code (BMC) prohibiting natural gas infrastructure in new buildings with an effective date of [].

Financial Implications: See report

Contact: Kate Harrison, Councilmember, District 4, 981-7140

Action: 3 speakers. Discussion held.

M/S/C (Robinson/Harrison) to continue to the May 2, 2019, meeting.

Vote: Ayes – Harrison, Robinson; Noes – None; Abstain – None; Absent – Davila.

4. Considering Multi-year Bidding Processes for Street Paving

From: Mayor Arreguin, and Councilmembers Hahn, Harrison, and Davila

Referred: March 11, 2019

Due: September 15, 2019

Recommendation: 1. Restate the recommendation approved at the December 11, 2018 Council meeting to create a two-year bidding process for street paving to realize savings by (a) reducing by 50% City staff time devoted to bidding and contracting processes over each two year period and (b) benefitting from reduced pricing which may be available for larger contracts that offer greater economies of scale and reduce contractors' bidding and contracting costs.

2. Short-term referral to the City Manager to explore the possibility, feasibility, costs, and benefits of bidding in increments of up to 5 years to encompass entire 5-year paving plans, or other ideas to more rationally and cost-effectively align the paving plan with budget cycles and reduce costs associated with frequent bid cycles for relatively small contracts.

Financial Implications: See report

Contact: Jesse Arreguin, Mayor, 981-7100

Action: 1 speaker. Discussion held.

Item continued to the next meeting

Unscheduled Items

These items are not scheduled for discussion or action at this meeting. The Committee may schedule these items to the Action Calendar of a future Committee meeting.

Adjournment

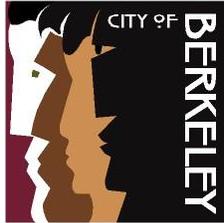
Action: M/S/C (Robinson/Harrison) to adjourn the meeting.

Vote: Ayes – Harrison, Robinson; Noes – None; Abstain – None; Absent – Davila.

Adjourned at 3:54 p.m.

I hereby certify that this is a true and correct record of the Facilities, Infrastructure, Transportation, Environment & Sustainability Committee meeting held on March 21, 2019.

April Richardson, Assistant City Clerk



Office of the Mayor

2a

SUPPLEMENTAL AGENDA MATERIAL for Supplemental Packet 2

Meeting Date: December 11, 2018

Item Number: Fa

Item Description: Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Projects

Submitted by: Mayor Jesse Arreguín

On September 15, 2015, the City Council referred Item 39 “Mandatory Green Stormwater Infrastructure in New Developments” to the City Manager, Planning Commission and Community Environmental Advisory Committee (see attachment). The proposal was modeled after ordinances adopted in San Francisco and Seattle requiring the instillation of stormwater infrastructure in larger projects.

The CEAC has brought its recommendations back to the City Council in response to this referral. Many of the recommendations proposed by CEAC are worth further study, however a key question is what projects should they apply to? My original referral only recommended that these requirements apply to projects of 100 units or more, or commercial developments that result in 5,000 square feet of new or replaced impervious surface.

I am proposing a modification to the CEAC recommendation as follows:

Refer to the City Manager and Planning Commission to develop measures to incorporate Green Stormwater Infrastructure and water conservation features in new projects. The regulations should apply to large residential developments of 50 units or more or commercial developments that result in 5,000 square feet of new or replaced impervious surface. The City Manager and Planning Commission should consider the legislation adopted in San Francisco and Seattle and the following recommendations from the CEAC:

- **Comply beyond the State and Alameda County current requirements;**

2180 Milvia Street, Berkeley, CA 94704 Tel: 510.981.7100 TDD: 510.981.6903 Fax: 510.981.7199
E-Mail: mayor@CityofBerkeley.info

- **Encourage the treating and detaining of runoff up to approximately the 85th percentile of water deposited in a 24-hour period;**
- **Establish site design measures that include minimizing impervious surfaces;**
- **Offer option(s) for property owners to fund in-lieu centralized off-site storm-water retention facilities that would hold an equivalent volume of runoff;**
- **Require abatements for newly paved areas over a specific size;**
- **Make exceptions for properties that offer significantly below-market rent or sale prices;**
- **Incorporate these measures for private property with similar measures for Public Works [City projects], while coordinating with EBMUD, BUSD, UCB and LBNL.**



Jesse Arreguín
City Councilmember, District 4

CONSENT CALENDAR
September 15, 2015

To: Honorable Mayor and Members of the City Council
From: Councilmember Jesse Arreguín
Subject: Mandatory Green Stormwater Infrastructure in New Developments

RECOMMENDATION

Refer to the City Manager and Planning and Community Environmental Advisory Commissions to develop an ordinance requiring large residential developments of 100 units or more or commercial developments that result in 5,000 square feet of new or replaced impervious surface, to incorporate Green Stormwater Infrastructure (GSI) and water conservation features into new projects.

BACKGROUND

Green Stormwater Infrastrucutre (GSI) is a form of drainage control that uses infiltration, evapotranspiration, or stormwater reuse. Examples of this include permeable pavement, bio swales, green roofs, rain gardens, cisterns and other rain catchment systems.

Cities such as San Francisco and Seattle (which like Berkeley, are bordered by a body of water) have regulations requiring the treatment of stormwater onsite. In April 2010, San Francisco passed an ordinance requiring developments that disturb 5,000 square feet of surface to include stormwater management controls (San Francisco Public Works Code, Article 4.2, Section 147-147.6). Seattle's Stormwater Code (Seattle Municipal Code Section 22.800-22.808) requires the implementation of GSI on developments that add or replace 2,000 square feet of impervious surfaces to the maximum extent possible with the purpose of infiltration, retention, and dispersal.

The City of Berkeley has already taken some steps to promote the use of Green Infrastructure as a way to mitigate negative impacts to our City's watersheds. On June 23, 2009, the City Council passed Resolution No. 64,507, which implemented Bay-Friendly Landscaping policies under the Alameda County Waste Management Authority. The City also complies with the Alameda County Clean Water Program, as passed in Resolution No. 66,004 on February 5, 2013, which aims at reducing pollutants from urban storm runoff. In addition, Measure M funds have supported a number of publicly-funded green infrastructure projects throughout the city. However in order to make a measurable difference to reduce storm water runoff and to conserve water, and to better implement the city's adopted Watershed Management Plan, private developments should install green infrastructure features at the time of construction.

Requiring GSI in developments will help the City better achieve these goals and help mitigate environmental impacts on our watersheds and Bay.

FINANCIAL IMPLICATIONS

Staff Time

ENVIRONMENTAL SUSTAINABILITY

Green Stormwater Infrastructure is a necessity given California's historic drought and West Berkeley's flooding experiences during any sizeable storm. GSI helps in preserving the natural flow of storm runoff which is often obstructed in urban areas. GSI has the ability to retain water, prevent runoff which leads to flooding, and remove pollutants among other environmentally beneficial factors.

CONTACT PERSON

Jesse Arreguin, Councilmember, District 4 510-981-7140

Attachments:

- 1: San Francisco Public Works Code, Article 4.2, Section 147-147.6
- 2: Seattle Municipal Code Section 22.800-22.808

83-10

FILE NO. 100102

ORDINANCE NO.

[Requiring the Development and Maintenance of Stormwater Management Controls]

Ordinance amending the San Francisco Public Works Code by repealing Article 4.2, sections 140 – 149.4, and adding Article 4.2, sections 147 – 147.6, requiring the development and maintenance of stormwater management controls for specified activities that disturb 5,000 square feet or more of the ground surface, and are subject to building, planning and subdivision approvals.

Note: Additions are single-underline italics Times New Roman; deletions are ~~strikethrough italics Times New Roman~~. Board amendment additions are double underlined. Board amendment deletions are ~~strikethrough-normal~~.

Be it ordained by the People of the City and County of San Francisco:

Section 1. Environmental Findings. The Planning Department has determined that the actions contemplated in this Ordinance are in compliance with the California Environmental Quality Act (California Public Resources Code sections 21000 et seq.). Said determination is on file with the Clerk of the Board of Supervisors in File No. 100102 and is incorporated herein by reference.

Section 2. The San Francisco Public Works Code is hereby amended by repealing Sections 140 – 149.4 of Article 4.2.

Section 3. The San Francisco Public Works Code is hereby amended by adding Sections 147 – 147.6, to Article 4.2, to read as follows:

Article 4.2. SEWER SYSTEM MANAGEMENT.

Section 147. Stormwater Management

(a) The intent of Sections 147 – 147.6 is to protect and enhance the water quality in the City and County of San Francisco's sewer system, stormwater collection system and receiving

1 waters pursuant to, and consistent with Federal and State laws, lawful standards and orders
2 applicable to stormwater and urban runoff control, and the City's authority to manage and
3 operate its drainage systems.

4 (b) Urban runoff is a significant cause of pollution throughout California. Pollutants of
5 concern found in urban runoff include sediments, non-sediment solids, nutrients, pathogens,
6 oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic
7 aromatic hydrocarbons (PAHs), trash, and pesticides and herbicides.

8 (c) During urban development, two important changes occur. First, where no urban
9 development has previously occurred, natural vegetated pervious ground cover is converted
10 to impervious surfaces such as paved highways, streets, rooftops, and parking lots. Natural
11 vegetated soil can both absorb rainwater and remove pollutants, providing a very effective
12 purification process. Because pavement and concrete can neither absorb water nor remove
13 pollutants, the natural purification characteristics of the land are lost. Second, urban
14 development creates new pollutant sources, including vehicle emissions, vehicle maintenance
15 wastes, pesticides, household hazardous wastes, pet wastes, trash, and other contaminants
16 that can be washed into the City's stormwater collection systems.

17 (d) A high percentage of impervious area correlates to a higher rate of stormwater
18 runoff, which generates greater pollutant loadings to the stormwater collection system,
19 resulting in turbid water, nutrient enrichment, bacterial contamination, toxic compounds,
20 temperature increases, and increases of trash or debris.

21 (e) When water quality impacts are considered during the planning stages of a project,
22 new development and redevelopment projects can more efficiently incorporate measures to
23 protect water quality.

1 (f) Sections 147 – 147.6 protect the health, safety and general welfare of the City's
2 residents by:

3 (1) minimizing increases in pollution caused by stormwater runoff from development
4 that would otherwise degrade local water quality;

5 (3) controlling the discharge to the City's sewer and drainage systems from spills,
6 dumping or disposal of pollutants; and

7 (4) reducing stormwater run-off rates, volume, and nonpoint source pollution
8 whenever possible, through stormwater management controls, and ensuring that
9 these management controls are safe and properly maintained.

10 Section 147.1. Definitions.

11 In addition to the definitions provided in section 119 of Article 4.1 of this Code, the
12 following definitions shall apply:

13 (a) Best management practices or "BMPs." Structural devices, measures, or programs
14 used to reduce pollution in stormwater runoff. BMPs manage the quantity and improve the
15 quality of stormwater runoff in accordance with the Guidelines and applicable state and
16 federal regulatory requirements.

17 (b) Department. The San Francisco Public Utilities Commission. With regard to
18 stormwater management in areas of the City under the jurisdiction of the Port Commission,
19 "Department" means the San Francisco Port Commission until the Port Commission adopts
20 its own standards and procedures.

21 (c) Development Project. Any activity disturbing 5,000 square feet or more of the
22 ground surface, measured cumulatively from the effective date of this Article. Activities that
23 disturb the ground surface include, but are not limited to, the construction, modification,
24 conversion, or alteration of any building or structure and associated grading, filling,
25

1 excavation, change in the existing topography, and the addition or replacement of impervious
2 surface. All sidewalks, parking, driveways, and landscaped and irrigated areas constructed in
3 conjunction with the Development Project are included in the project area. Development
4 Projects do not include interior remodeling projects, maintenance activities such as top-layer
5 grinding, repaving, and re-roofing, or modifications, conversions or alterations of buildings or
6 structures that does not increase the ground surface footprint of the building or structure.

7 (d) Development runoff requirements. The performance standards set forth in the
8 Guidelines to address both the construction and post-construction phase impacts of new
9 Development Projects on stormwater quality.

10 (e) General Manager. The General Manager of the Public Utilities Commission of the
11 City, or a designated representative of the General Manager. With regard to stormwater
12 management in areas of the City under the jurisdiction of the Port Commission, the Executive
13 Director of the San Francisco Port Commission or a designated representative of the
14 Executive Director shall have the same authority under this Article as the General Manager
15 until the Port Commission adopts it own standards and procedures regarding stormwater
16 management in all areas under Port Commission jurisdiction.

17 (f) Guidelines. The Stormwater Design Guidelines adopted by the San Francisco Public
18 Utilities Commission or the San Francisco Port Commission. The Guidelines contain
19 requirements pertaining to the type, design, sizing, and maintenance of post-construction
20 stormwater BMPs.

21 (g) Low Impact Design (LID). A stormwater management approach that promotes the
22 use of ecological and landscape-based systems that mimic pre-development drainage
23 patterns and hydrologic processes by increasing retention, detention, infiltration, and
24 treatment of stormwater at its source.

1 (h) Non-Stormwater Discharge. Any discharge to the City's Stormwater Collection
2 System that is not composed entirely of Stormwater.

3 (i) Pollutant. Any substance listed in sec. 119(aa) of Article 4.1 of the Public Works
4 Code or any substance described as a pollutant in the Guidelines.

5 (j) Separate Stormwater/sewer System. Stormwater and sanitary sewage collection
6 facilities that convey, treat and discharge stormwater and sewage in separated catchbasins,
7 pipelines, treatment facilities, outfalls, and other facilities, and do not combine stormwater and
8 sewage in the same facilities.

9 (k) Stormwater. Water that originates from atmospheric moisture (rainfall or snowfall)
10 and that falls onto land, water or other surfaces.

11 (l) Stormwater Collection System. All City facilities operated by the San Francisco
12 Public Utilities Commission or the Port of San Francisco for collecting, transporting, treating
13 and disposing of stormwater. For purposes of this Article, the Stormwater Collection System
14 includes facilities owned and operated by public entities other than the City, where such
15 facilities direct stormwater into the Stormwater Collection System and are subject to the
16 jurisdiction of the San Francisco Public Utilities Commission or the Port of San Francisco as
17 defined by law, contract, or interjurisdictional agreement.

18 (m) Stormwater Control. A device designed to remove pollution in stormwater runoff
19 through detention, retention, filtration, direct plant uptake, or infiltration.

20 (n) Stormwater Control Plan. A plan that meets all applicable criteria, performance
21 standards and other requirements contained in this Article and the Guidelines.

22 Section 147.2. Stormwater Control Plan

23 (a) Development Projects. Every application for a Development Project , including, but
24 not limited to, a building or encroachment permit conditional use permit, variance, site permit,
25

1 or design review, shall be accompanied by a Stormwater Control Plan that meets the
2 stormwater control criteria provided by the Guidelines. No City department shall approve or
3 issue a conditional use permit, variance, site permit, design review approval, building or
4 encroachment permit unless and until a Stormwater Control Plan developed in accordance
5 with this Article and the Guidelines has been approved by the General Manager. All projects
6 subject to the stormwater management requirements of Chapter 13C of the San Francisco
7 Building Code shall comply with the requirements of the Guidelines.

8 (b) Subdivision Approvals.

9 (1) Parcel Map or Tentative Subdivision Map Conditions. The Director of Public
10 Works shall not approve a tentative subdivision map or a parcel map for any property unless
11 a condition is imposed requiring compliance with all applicable Stormwater Control Plans to
12 serve the potential uses of the property covered by the parcel map or tentative subdivision
13 map, as may be further specified in the provisions of this Article or the Guidelines.

14 (2) Subdivision Regulations. The Director of Public Works shall adopt regulations
15 as necessary, consistent with and in furtherance of this Article, to ensure that all subdividers
16 of property subject to the provisions of this ordinance provide a Stormwater Control Plan in
17 compliance with this Article and the Guidelines.

18 (3) Final Maps. The Director of Public Works shall not endorse and file a final map
19 for property within the boundaries of the City and County of San Francisco without first
20 determining whether:

21 (A) The subdivider has complied with the conditions imposed on the tentative
22 subdivision map or parcel map, pursuant to this Article and the Guidelines; and
23
24
25

1 (B) For any such conditions not fully satisfied prior to the recordation of the final
2 map, the subdivider has signed a certificate of agreement and/or improvement agreement, to
3 ensure compliance with such conditions.

4 (4) This Subsection (b) shall not apply to tentative subdivision maps or parcel
5 maps submitted solely for the purposes of condominium conversion, as defined in San
6 Francisco Subdivision Code Section 1308(d).

7 Sec. 147.3. Limitations and Prohibited Discharges.

8 (a) The establishment, use, maintenance or continuation of any unauthorized drainage
9 connections to the Stormwater Collection System is prohibited.

10 (b) The discharge of Pollutants and Non-stormwater Discharges into the stormwater
11 collection facilities located in the Separate Stormwater/sewer System portions of the
12 Stormwater Collection System is prohibited, except as provided in this section.

13 (c) The following discharges are exempt from the prohibitions set forth subsection (b)
14 above if the Regional Water Quality Control Board approves the exempted category under
15 section C. 11. of the City's NPDES permit: uncontaminated pumped groundwater, foundation
16 drains, water from crawl space pumps, footing drains, air conditioning condensate, irrigation
17 water, landscape irrigation, lawn or garden watering, planned and unplanned discharges from
18 potable water sources, water line and hydrant flushing, individual residential car washing,
19 discharges or flows from emergency fire fighting activities, dechlorinated swimming pool
20 discharges.

21 Section 147.4. Compliance with Maintenance and Inspection Requirements.

22 (a) All Stormwater Controls shall be maintained according to the Guidelines and the
23 operation and maintenance plan included in the approved Stormwater Control Plan. The
24 person(s) or organization(s) responsible for maintenance shall be designated in the plan.
25

1 Those persons responsible for maintenance shall inspect the Stormwater Controls at least
2 annually and shall maintain the Stormwater Controls as required by the Guidelines and
3 described in the Stormwater Control Plan.

4 (b) Operation and Maintenance Inspection and Certificates. Every person who owns,
5 leases or operates any Stormwater Control or Controls must provide annual self-certification
6 for inspection and maintenance, as set forth in the Guidelines.

7 (c) The General Manager may perform routine or scheduled inspections, as may be
8 deemed necessary in the General Manager's sole discretion to carry out the intent of this
9 Article and the Guidelines, including, but not limited to, random sampling or sampling in areas
10 with evidence of Stormwater contamination, evidence of the discharge of Non-stormwater to
11 the Stormwater Collection System, or similar activities.

12 (d) Authority to Sample and Establish Sampling Devices. The General Manager may
13 require any person discharging Stormwater to the Stormwater Collection System to provide
14 devices or locations necessary to conduct sampling or metering operations.

15 (e) Notification of Spills. All persons in charge of the Stormwater Controls shall
16 provide immediate notification to the General Manager of any suspected, confirmed or
17 unconfirmed release of pollutants creating a risk of non-stormwater discharge into the
18 Stormwater Collection System. Such persons shall take all necessary steps to ensure the
19 detection and containment and clean up of such release. This notification requirement is in
20 addition to and not in lieu of other required notifications.

21 (f) Requirement to Test or Monitor. The General Manager may require that any person
22 responsible for Stormwater Controls undertake such monitoring activities or analysis and
23 furnish such reports as the General Manager may specify.

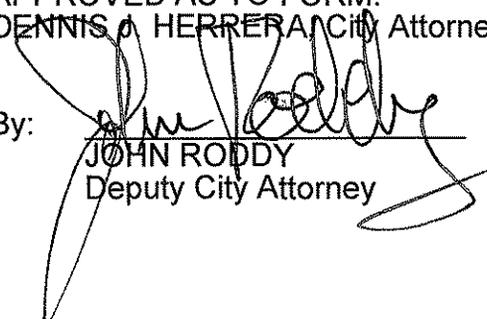
24 Section 147.5 Enforcement and Cost Reimbursement.
25

1 Any violation of this Article may be enforced by the General Manager pursuant to section 132
2 of Article 4.1 of the Public Works Code. Persons violating any provision of this Article, the
3 Guidelines, or department regulations may be subject to penalties and abatement in
4 accordance with the Guidelines and sections 133 and 134 of Article 4.1 of the Public Works
5 Code.

6 Section 147.6 Severability

7 If any section, subsection, subdivision, paragraph, sentence, clause, or phrase of this
8 Article, is for any reason held to be unconstitutional, invalid or ineffective by any court of
9 competent jurisdiction, such decision shall not affect the validity or effectiveness of the
10 remaining portions of this Article. The Board of Supervisors declares that it would have
11 passed each section, subsection, subdivision, paragraph, sentence, clause, or phrase of this
12 Article irrespective of the fact that any one or more sections, subsections, subdivisions,
13 paragraphs, sentences, clauses, or phrases could be declared unconstitutional, invalid or
14 ineffective.

17 APPROVED AS TO FORM:
18 DENNIS A. HERRERA, City Attorney

19 By: 
20 JOHN RODDY
21 Deputy City Attorney



City and County of San Francisco

Tails Ordinance

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

File Number: 100102

Date Passed: April 13, 2010

Ordinance amending the San Francisco Public Works Code by repealing Article 4.2, Sections 140 - 149.4, and adding Article 4.2, Sections 147 - 147.6, requiring the development and maintenance of stormwater management controls for specified activities that disturb 5,000 square feet or more of the ground surface, and are subject to building, planning and subdivision approvals.

April 06, 2010 Board of Supervisors - PASSED, ON FIRST READING

Ayes: 10 - Avalos, Campos, Chiu, Chu, Daly, Dufty, Elsbernd, Mar, Maxwell and Mirkarimi
Excused: 1 - Alioto-Pier

April 13, 2010 Board of Supervisors - FINALLY PASSED

Ayes: 11 - Alioto-Pier, Avalos, Campos, Chiu, Chu, Daly, Dufty, Elsbernd, Mar, Maxwell and Mirkarimi

File No. 100102

I hereby certify that the foregoing Ordinance was FINALLY PASSED on 4/13/2010 by the Board of Supervisors of the City and County of San Francisco.

[Handwritten signature of Mayor Gavin Newsom]

Mayor Gavin Newsom

[Handwritten signature of Angela Calvillo]

Angela Calvillo
Clerk of the Board

4/22/2010

Date Approved

Subtitle VIII. - Stormwater Code^[17]

Footnotes:

--- (17) ---

Cross reference— For provisions regarding emergency control of drainage problems, mud flows and earth slides, see Chapter 10.06 of this Code.

Chapter 22.800 - TITLE, PURPOSE, SCOPE AND AUTHORITY

Sections:

22.800.010 - Title

This subtitle, comprised of Chapters 22.800 through 22.808, shall be known as the "Stormwater Code" and may be cited as such.

(Ord. 123105, § 2, 2009.)

22.800.020 - Purpose

- A. The provisions of this subtitle shall be liberally construed to accomplish its remedial purposes, which are:
1. Protect, to the greatest extent practicable, life, property and the environment from loss, injury and damage by pollution, erosion, flooding, landslides, strong ground motion, soil liquefaction, accelerated soil creep, settlement and subsidence, and other potential hazards, whether from natural causes or from human activity;
 2. Protect the public interest in drainage and related functions of drainage basins, watercourses and shoreline areas;
 3. Protect receiving waters from pollution, mechanical damage, excessive flows and other conditions in their drainage basins which will increase the rate of downcutting, streambank erosion, and/or the degree of turbidity, siltation and other forms of pollution, or which will reduce their low flows or low levels to levels which degrade the environment, reduce recharging of groundwater, or endanger aquatic and benthic life within these receiving waters and receiving waters of the state;
 4. Meet the requirements of state and federal law and the City's municipal stormwater National Pollutant Discharge Elimination System ("NPDES") permit;
 5. To protect the functions and values of environmentally critical areas as required under the state's Growth Management Act and Shoreline Management Act;
 6. To protect the public drainage system from loss, injury and damage by pollution, erosion, flooding, landslides, strong ground motion, soil liquefaction, accelerated soil creep, settlement and subsidence, and other potential hazards, whether from natural causes or from human activity; and
 7. Fulfill the responsibilities of the City as trustee of the environment for future generations.
- B. It is expressly the purpose of this subtitle to provide for and promote the health, safety and welfare of the general public. This subtitle is not intended to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by its terms.
- C. It is expressly acknowledged that water quality degradation can result either directly from one discharge or through the collective impact of many small discharges. Therefore, the water quality protection measures in this subtitle are necessary to protect the health, safety and welfare of the residents of Seattle and the integrity of natural resources for the benefit of all and for the purposes of this subtitle. Such water quality protection measures are required under the federal Clean Water Act, 33 U.S.C. Section 1251, et seq., and in response to the obligations of the City's municipal

stormwater discharge permit, issued by the State of Washington under the federal National Pollutant Discharge Elimination System program.

(Ord. 123105, § 2, 2009.)

22.800.030 - Scope and Applicability

This subtitle applies to:

- A. All grading and drainage and erosion control, whether or not a permit is required;
- B. All land disturbing activities, whether or not a permit is required;
- C. All discharges directly or indirectly to a public drainage system;
- D. All discharges directly or indirectly into receiving waters within or contiguous to Seattle city limits;
- E. All new and existing land uses; and
- F. All real property.

(Ord. 123105, § 2, 2009.)

22.800.040 - Exemptions, Adjustments, and Exceptions

A. Exemptions.

- 1. The following land uses are exempt from the provisions of this subtitle:
 - a. Commercial agriculture, including only those activities conducted on lands defined in RCW 84.34.020(2), and production of crops or livestock for wholesale trade; and
 - b. Forest practices regulated under Title 222 Washington Administrative Code, except for Class IV general forest practices, as defined in WAC 222-16-050, that are conversions from timber land to other uses.
- 2. The following land disturbing activities are not required to comply with the specific minimum requirements listed below.
 - a. Maintenance, repair, or installation of underground or overhead utility facilities, such as, but not limited to, pipes, conduits and vaults, and that includes replacing the ground surface with in-kind material or materials with similar runoff characteristics are not required to comply with Section 22.805.080 (Minimum Requirements for Flow Control) or Section 22.805.090 (Minimum Requirements for Treatment), except as modified as follows:
 - 1) Installation of a new or replacement of an existing public drainage system, public combined sewer, or public sanitary sewer in the public right-of-way shall comply with Section 22.805.060 (Minimum requirements for Roadway Projects) when these activities are implemented as publicly bid capital improvement projects funded by Seattle Public Utilities; and
 - 2) Installation of underground or overhead utility facilities that are integral with and contiguous to a road-related project shall comply with Section 22.805.060 (Minimum requirements for Roadway Projects).
 - b. Road maintenance practices limited to the following activities are not required to comply with Section 22.805.060 (Minimum requirements for Roadway Projects), Section 22.805.080 (Minimum Requirements for Flow Control), or Section 22.805.090 (Minimum Requirements for Treatment):
 - 1) Pothole and square cut patching;
 - 2) Overlaying existing asphalt or concrete or brick pavement with asphalt or concrete without expanding the area of coverage;

- 3) Shoulder grading;
 - 4) Reshaping or regrading drainage ditches;
 - 5) Crack sealing; and
 - 6) Vegetation maintenance.
3. Sites that produce no runoff as determined by a licensed civil engineer using a continuous runoff model approved by the Director are not required to comply with Section 22.805.080 (Minimum Requirements for Flow Control).
 4. When a portion of the site being developed discharges only to the public combined sewer, that portion is not required to comply with the provision of subsection 22.805.020.K (Install Source Control BMPs) unless the Director determines that these activities pose a hazard to public health, safety or welfare; endanger any property; adversely affect the safety and operation of city right-of-way, utilities, or other property owned or maintained by the City; or adversely affect the functions and values of an environmentally critical area or buffer.
 5. Residential activities are not required to comply with the provision of subsection 22.805.020.K (Install Source Control BMPs) unless the Director determines that these activities pose a hazard to public health, safety or welfare; endanger any property; adversely affect the safety and operation of city right-of-way, utilities, or other property owned or maintained by the City; or adversely affect the functions and values of an environmentally critical area or buffer.
 6. With respect to all state highway right-of-way under WSDOT control within the jurisdiction of the City of Seattle, WSDOT shall use the current, approved Highway Runoff Manual (HRM) for its existing and new facilities and rights-of-way, as addressed in WAC 173-270-030(1) and (2). Exceptions to this exemption, where more stringent stormwater management requirements apply, are addressed in WAC 173-270-030(3)(b) and (c).
 - a. When a state highway is located in the jurisdiction of a local government that is required by Ecology to use more stringent standards to protect the quality of receiving waters, WSDOT shall comply with the same standards to promote uniform stormwater management.
 - b. WSDOT shall comply with standards identified in watershed action plans for WSDOT rights-of-way, as required by WAC 400-12-570.
 - c. Other instances where more stringent local stormwater standards apply are projects subject to tribal government standards or to the stormwater management-related permit conditions imposed under Chapter 25.09 to protect environmentally critical areas and their buffers (under the Growth Management Act), an NPDES permit, or shoreline master programs (under the Shoreline Management Act). In addition, WSDOT shall comply with local jurisdiction stormwater standards when WSDOT elects, and is granted permission, to discharge stormwater runoff into a municipality's stormwater system or combined sewer system.
- B. Adjustments.
1. The Director may approve a request for adjustments to the requirements of this subtitle when the Director finds that:
 - a. The adjustment provides substantially equivalent environmental protection; and
 - b. The objectives of safety, function, environmental protection, and facility maintenance are met, based on sound engineering practices.
 2. During construction, the Director may require, or the applicant may request, that the construction of drainage control facilities and associated project designs be adjusted if physical conditions are discovered on the site that are inconsistent with the assumptions upon which the approval was based, including but not limited to unexpected soil and/or water conditions, weather generated problems, or changes in the design of the improved areas.

3. A request by the applicant for adjustments shall be submitted to the Director for approval prior to implementation. The request shall be in writing and shall provide facts substantiating the requirements of subsection 22.805.080.B1, and if made during construction, the factors in subsection B2. Any such modifications made during the construction of drainage control facilities shall be recorded on the final approved drainage control plan, a revised copy of which shall be filed by the Director.

C. Exceptions.

1. The Director may approve a request for an exception to the requirements of this subtitle when the applicant demonstrates that the exception will not increase risks in the vicinity and/or downstream of the property to public health, safety and welfare, or to water quality, or to public and private property, and:
 - a. The requirement would cause a severe and unexpected financial hardship that outweighs the requirement's benefits, and the criteria for an adjustment cannot be met; or
 - b. The requirement would cause harm or a significant threat of harm to public health, safety and welfare, the environment, or public and private property, and the criteria for an adjustment cannot be met; or
 - c. The requirement is not technically feasible, and the criteria for an adjustment cannot be met; or
 - d. An emergency situation exists that necessitates approval of the exception.
2. An exception shall only be granted to the extent necessary to provide relief from the economic hardship, to alleviate the harm or threat of harm, to the degree that compliance with the requirement becomes technically feasible, or to perform the emergency work that the Director determines exists.
3. An applicant is not entitled to an exception, whether or not the criteria allowing approval of an exception are met.
4. The Director may require an applicant to provide additional information at the applicant's expense, including, but not limited to an engineer's report or analysis.
5. When an exception is granted, the Director may impose new or additional requirements to offset or mitigate harm that may be caused by granting the exception, or that would have been prevented if the exception had not been granted.
6. Public notice of an application for an exception and of the Director's decision on the application shall be provided in the manner prescribed for Type II land use decisions, as set forth in Chapter 23.76.
7. The Director's decision shall be in writing with written findings of fact. Decisions approving an exception based on severe and unexpected economic hardship shall address all the factors in subsection 22.805.080.C.8.
8. An application for an exception on the grounds of severe and unexpected financial hardship must describe, at a minimum, all of the following:
 - a. The current, pre-project use of the site; and
 - b. How application of the requirement(s) for which an exception is being requested restricts the proposed use of the site compared to the restrictions that existed prior to the adoption of this current subtitle; and
 - c. The possible remaining uses of the site if the exception were not granted; and
 - d. The uses of the site that would have been allowed prior to the adoption of this subtitle; and

- e. A comparison of the estimated amount and percentage of value loss as a result of the requirements versus the estimated amount and percentage of value loss as a result of requirements that existed prior to adoption of the requirements of this subtitle; and
 - f. The feasibility of the owner or developer to alter the project to apply the requirements of this subtitle.
9. In addition to rights under Chapter 3.02 of the Seattle Municipal Code, any person aggrieved by a Director's decision on an application for an exception may appeal to the Hearing Examiner's Office by filing an appeal, with the applicable filing fee, as set forth in Section 23.76.022. However, appeals of a Notice of Violation, Director's order, or invoice issued pursuant to this subtitle shall follow the required procedure established in Chapter 22.808 of this subtitle.
10. The Hearing Examiner shall affirm the Director's determination on the exception unless the examiner finds the determination is clearly erroneous based on substantial evidence. The applicant for the exception shall have the burden of proof on all issues related to justifying the exception.
11. The Director shall keep a record, including the Director's written findings of fact, on all approved requests for exceptions.

(Ord. [124758](#), § 1, 2015; Ord. 123105, § 2, 2009.)

22.800.050 - Potentially Hazardous Locations

- A. Any site on a list, register, or data base compiled by the United States Environmental Protection Agency or the Washington State Department of Ecology for investigation, cleanup, or other action regarding contamination under any federal or state environmental law shall be a potentially hazardous location under this subtitle. When EPA or Ecology removes the site from the list, register or data base, or when the Director of DPD determines the owner has otherwise established the contamination does not pose a present or potential threat to human health or the environment, the site will no longer be considered a potentially hazardous location.
- B. The following property may also be designated by the Director of DPD as potentially hazardous locations:
- 1. Existing and/or abandoned solid waste disposal sites;
 - 2. Hazardous waste treatment, storage, or disposal facilities, all as defined by the federal Solid Waste Disposal Act, 42 U.S.C. section 6901, et seq.

(Ord. 123105, § 2, 2009.)

22.800.060 - Compliance With Other Laws

- A. The requirements of this subtitle are minimum requirements. They do not replace, repeal, abrogate, supersede or affect any other more stringent requirements, rules, regulations, covenants, standards, or restrictions. Where this subtitle imposes requirements that are more protective of human health or the environment than those set forth elsewhere, the provisions of this subtitle shall prevail. When this subtitle imposes requirements that are less protective of human health or the environment than those set forth elsewhere, the provisions of the more protective requirements shall prevail.
- B. Approvals and permits granted under this subtitle are not waivers of the requirements of any other laws, nor do they indicate compliance with any other laws. Compliance is still required with all applicable federal, state and local laws and regulations, including rules promulgated under authority of this subtitle.
- C. Compliance with the provisions of this subtitle and of regulations and manuals adopted by the City in relation to this subtitle does not necessarily mitigate all impacts to the environment. Thus, compliance with this subtitle and related regulations and manuals should not be construed as mitigating all drainage water or other environmental impacts, and additional mitigation may be

required to protect the environment. The primary obligation for compliance with this subtitle, and for preventing environmental harm on or from property, is placed upon responsible parties as defined by this subtitle.

(Ord. 123105, § 2, 2009.)

22.800.070 - Minimum Requirements for City Agency Projects

A. Compliance. City agencies shall comply with all the requirements of this subtitle except as specified below:

1. City agencies are not required to obtain permits and approvals under this subtitle, other than inspections as set out in subsection B of this section, for work performed within a public right-of-way or for work performed for the operation and maintenance of park lands under the control or jurisdiction of the Department of Parks and Recreation. Where the work occurs in a public right-of-way, it shall also comply with Seattle Municipal Code Title 15, Street and Sidewalk Use, including the applicable requirements to obtain permits or approvals.
2. A City agency project, as defined in Section 22.801.170, that is not required to obtain permit(s) and approval(s) per subsection 22.800.070.A.1 and meets all of the conditions set forth below, is not required to comply with Section 22.805.080 (Minimum Requirements for Flow Control) or Section 22.805.090 (Minimum Requirements for Treatment).
 - a. The project begins land disturbing activities within 18 months of the effective date of this subtitle, and;
 - b. The project complies with subsections 22.802.015.C.4, 22.802.016. B.1, and 22.802.016.B.2 of the Stormwater, Grading and Drainage Control Code that was made effective July 5, 2000 by Ordinance 119965, and
 - c. The project meets one or more of the following criteria:
 - 1) Project funding was appropriated as identified in Ordinance 122863 titled, "An ordinance adopting a budget, including a capital improvement program and a position list, for the City of Seattle for 2009"; or
 - 2) Project received or will receive voter approval of financing before January 1, 2009; or
 - 3) Project received or will receive funds based on grant application(s) submitted before January 1, 2009.

B. Inspection.

1. When the City conducts projects for which review and approval is required under Chapter 22.807 (Drainage Control Review and Application Requirements) the work shall be inspected by the City agency conducting the project or supervising the contract for the project. The inspector for the City agency shall be responsible for ascertaining that the grading and drainage control is done in a manner consistent with the requirements of this subtitle.
2. A City agency need not provide an inspector from its own agency provided either:
 - a. The work is inspected by an appropriate inspector from another City agency; or
 - b. The work is inspected by an appropriate inspector hired for that purpose by a City agency; or
 - c. The work is inspected by the licensed civil or geotechnical engineer who prepared the plans and specifications for the work; or
 - d. A permit or approval is obtained from the Director of DPD, and the work is inspected by the Director.

- C. Certification of Compliance. City agencies shall meet the same standards as non-City projects, except as provided in subsection 22.800.070.A, and shall certify that each individual project meets those standards.

(Ord. 123105, § 2, 2009.)

22.800.075 - Compliance by Public Agencies

Whether or not they are required to obtain permits or submit documents, public agencies are subject to the substantive requirements of this subtitle, unless adjustments or exceptions are granted as set forth in Section 22.800.040 (Exemptions, Adjustments, and Exceptions) or the requirements have been waived under subsection 22.807.020.A.3.

(Ord. 123105, § 2, 2009.)

22.800.080 - Authority

- A. For projects not conducted in the public right-of-way, the Director of DPD has authority regarding the provisions of this subtitle pertaining to grading, review of drainage control plans, and review of construction stormwater control plans, and has inspection and enforcement authority pertaining to temporary erosion and sediment control measures.
- B. The Director of SPU has authority regarding all other provisions of this subtitle pertaining to drainage water, drainage, and erosion control, including inspection and enforcement authority. The Director of SPU may delegate authority to the Director of DPD or the Director of Seattle Department of Transportation regarding the provisions of this subtitle pertaining to review of drainage control plans, review of erosion control plans, and inspection and enforcement authority pertaining to temporary erosion and sediment control measures for projects conducted in the public right-of-way.
- C. The Directors of DPD, SDOT and SPU are authorized to take actions necessary to implement the provisions and purposes of this subtitle in their respective spheres of authority to the extent allowed by law, including, but not limited to, the following: promulgating and amending rules and regulations, pursuant to the Administrative Code, Chapter 3.02 of the Seattle Municipal Code; establishing and conducting inspection programs; establishing and conducting or, as set forth in Section 22.802.040, requiring responsible parties to conduct monitoring programs, which may include sampling of discharges to or from drainage control facilities, the public drainage system, or receiving waters; taking enforcement action; abating nuisances; promulgating guidance and policy documents; and reviewing and approving, conditioning, or disapproving required submittals and applications for approvals and permits. The Directors are authorized to exercise their authority under this subtitle in a manner consistent with their legal obligations as determined by the courts or by statute.
- D. The Director of SPU is authorized to develop, review, or approve drainage basin plans for managing receiving waters, drainage water, and erosion within individual basins. A drainage basin plan may, when approved by the Director of SPU, be used to modify requirements of this subtitle, provided the level of protection for human health, safety and welfare, the environment, and public or private property will equal or exceed that which would otherwise be achieved. A drainage basin plan that modifies the minimum requirements of this subtitle at a drainage basin level must be reviewed and approved by Ecology and adopted by City ordinance.
- E. The Director of SPU is authorized, to the extent allowed by law, to develop, review, or approve an Integrated Drainage Plan as an equivalent means of complying with the requirements of this subtitle, in which the developer of a project voluntarily enters into an agreement with the Director of SPU to implement an Integrated Drainage Plan that is specific to one or more sites where best management practices are employed such that the cumulative effect on the discharge from the site(s) to the same receiving water is the same or better than that which would be achieved by a less integrated, site-by-site implementation of best management practices.
- F. The Director of SPU is authorized, to the extent allowed by law, to enter into an agreement with the developer of a project for the developer to voluntarily contribute funds toward the construction of one

or more drainage control facilities that mitigate the impacts to the same receiving water that have been identified as a consequence of the proposed development.

- G. The Director of SPU is authorized, to the extent allowed by law, to enter into an agreement with the developer of a project for the developer to voluntarily construct one or more drainage control facilities at an alternative location, determined by the Director, to mitigate the impacts to the same receiving water that have been identified as a consequence of the proposed development.
- H. If the Director of SPU determines that a discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, a private drainage system, or a receiving water within or contiguous to Seattle city limits, has exceeded, exceeds, or will exceed water quality standards at the point of assessment, or has caused or contributed, is causing or contributing, or will cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit, and cannot be adequately addressed by the required best management practices, then the Director of SPU has the authority, to the extent allowed by law, to issue an order under Chapter 22.808 requiring the responsible party to undertake more stringent or additional best management practices. These best management practices may include additional source control or structural best management practices or other actions necessary to cease the exceedance, the prohibited discharge, or causing or contributing to the known or likely violation of water quality standards in the receiving water or the known or likely violation of the City's municipal stormwater NPDES permit. Structural best management practices may include but shall not be limited to: drainage control facilities, structural source controls, treatment facilities, constructed facilities such as enclosures, covering and/or berming of container storage areas, and revised drainage systems. For existing discharges as opposed to new projects, the Director may allow 12 months to install a new flow control facility, structural source control, or treatment facility after the Director notifies the responsible party in writing of the Director's determination pursuant to this subsection and of the flow control facility, structural source control, or treatment facility that must be installed.
- I. Unless an adjustment per subsection 22.800.040.B or an exception per subsection 22.800.040.C is approved by the Director, an owner or occupant who is required, or who wishes, to connect to a public drainage system shall be required to extend the public drainage system if a public drainage system is not accessible within an abutting public area across the full frontage of the property.
- J. The Director of DPD has the authority, to the extent allowed by law, to require sites with addition or replacement of less than 5,000 square feet of impervious surface or with less than one acre of land disturbing activity to comply with the requirements set forth in Section 22.805.080 or Section 22.805.090 when necessary to accomplish the purposes of this subtitle. In making this determination, the Director of DPD may consider, but not be limited to, the following attributes of the site: location within an Environmentally Critical Area; proximity and tributary to an Environmentally Critical Area; and proximity and tributary to an area with known erosion or flooding problems.

(Ord. 123105, § 2, 2009.)

22.800.090 - City Not Liable

- A. Nothing contained in this subtitle is intended to be nor shall be construed to create or form the basis for any liability on the part of the City, or its officers, employees or agents for any injury or damage resulting from the failure of responsible parties to comply with the provisions of this subtitle, or by reason or in consequence of any inspection, notice, order, certificate, permission or approval authorized or issued or done in connection with the implementation or enforcement of this subtitle, or by reason of any action or inaction on the part of the City related in any manner to the enforcement of this subtitle by its officers, employees or agents.
- B. The Director or any employee charged with the enforcement of this subtitle, acting in good faith and without malice on behalf of the City, shall not be personally liable for any damage that may accrue to persons or property as a result of any act required by the City, or by reason of any act or omission in the discharge of these duties. Any suit brought against the Director of DPD, Director of SPU or other

employee because of an act or omission performed in the enforcement of any provisions of this subtitle, shall be defended by the City.

- C. Nothing in this subtitle shall impose any liability on the City or any of its officers or employees for cleanup or any harm relating to sites containing hazardous materials, wastes or contaminated soil.

(Ord. 123105, § 2, 2009.)

Chapter 22.801 - DEFINITIONS

Sections:

22.801.010 - General

For the purpose of this subtitle, the words listed in this chapter have the following meanings, unless the context clearly indicates otherwise. Terms relating to pollutants and to hazardous wastes, materials, and substances, where not defined in this subtitle, shall be as defined in Washington Administrative Code Chapters 173-303, 173-304 and 173-340, the Seattle Building Code or the Seattle Fire Code, including future amendments to those codes. Words used in the singular include the plural, and words used in the plural include the singular.

(Ord. 123105, § 2, 2009.)

22.801.020 - "A"

"Agency" means any governmental entity or its subdivision.

"Agency, City" means "City agency" as defined in Section 25.09.520.

"Agency with jurisdiction" means those agencies with statutory authority to approve, condition or deny permits, such as the United States Environmental Protection Agency, the Washington State Department of Ecology or Public Health—Seattle & King County.

"Approved" means approved by the Director.

(Ord. 123668, § 1, 2011; Ord. 123105, § 2, 2009.)

22.801.030 - "B"

"Basin plan" means a plan to manage the quality and quantity of drainage water in a watershed or a drainage basin, including watershed action plans.

"Basic treatment facility" means a drainage control facility designed to reduce concentrations of total suspended solids in drainage water.

"Best management practice (BMP)" means a schedule of activities, prohibitions of practices, operational and maintenance procedures, structural facilities, or managerial practice or device that, when used singly or in combination, prevents, reduces, or treats contamination of drainage water, prevents or reduces soil erosion, or prevents or reduces other adverse effects of drainage water on receiving waters. When the Directors develop rules and/or manuals prescribing best management practices for particular purposes, whether or not those rules and/or manuals are adopted by ordinance, BMPs prescribed in the rules and/or manuals shall be the BMPs required for compliance with this subtitle.

"Building permit" means a document issued by the Department of Planning and Development authorizing construction or other specified activity in accordance with the Seattle Building Code (Chapter 22.100) or the Seattle Residential Code (Chapter 22.150).

(Ord. 123105, § 2, 2009.)

22.801.040 - "C"

"Capacity-constrained system" means a drainage system that the Director of SPU has determined to have inadequate capacity to carry drainage water.

"Cause or contribute to a violation" means and includes acts or omissions that create a violation, that increase the duration, extent or severity of a violation, or that aid or abet a violation.

"Certified Erosion and Sediment Control Lead (CESCL)" means an individual who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by the Washington State Department of Ecology.

"Civil engineer, licensed" means a person who is licensed by the State of Washington to practice civil engineering.

"City agency" means "City agency" as defined in Section 25.09.520.

"Combined sewer." See "public combined sewer."

"Construction Stormwater Control Plan" means a document that explains and illustrates the measures to be taken on the construction site to control pollutants on a construction project.

"Compaction" means the densification of earth material by mechanical means.

"Containment area" means the area designated for conducting pollution-generating activities for the purposes of implementing source controls or designing and installing source controls or treatment facilities.

"Contaminate" means the addition of sediment, any other pollutant or waste, or any illicit or prohibited discharge.

"Creek" means a Type 2-5 water as defined in WAC 222-16-031 and is used synonymously with "stream."

(Ord. 123105, § 2, 2009.)

22.801.050 - "D"

"Damages" means monetary compensation for harm, loss, costs, or expenses incurred by the City, including, but not limited, to the following: costs of abating or correcting violations of this subtitle; fines or penalties the City incurs as a result of a violation of this subtitle; and costs to repair or clean the public drainage system as a result of a violation. For the purposes of this subtitle, damages do not include compensation to any person other than the City.

"Designated receiving water" means the Duwamish River, Puget Sound, Lake Washington, Lake Union, Elliott Bay, Portage Bay, Union Bay, the Lake Washington Ship Canal, and other receiving waters determined by the Director of SPU and approved by Ecology as having sufficient capacity to receive discharges of drainage water such that a site discharging to the designated receiving water is not required to implement flow control.

"Detention" means temporary storage of drainage water for the purpose of controlling the drainage discharge rate.

"Development" means land disturbing activity or the addition or replacement of impervious surface.

"Director" means the Director of the Department authorized to take a particular action, and the Director's designees, who may be employees of that department or another City department.

"Director of DPD" means the Director of the Department of Planning and Development of The City of Seattle and/or the designee of the Director of Planning and Development, who may be employees of that department or another City department.

"Director of SDOT" means the Director of Seattle Department of Transportation of The City of Seattle and/or the designee of the Director of Seattle Department of Transportation, who may be employees of that department or another City department.

"Director of SPU" means the Director of Seattle Public Utilities of The City of Seattle and/or the designee of the Director of Seattle Public Utilities, who may be employees of that department or another City department.

"Discharge point" means the location from which drainage water from a site is released.

"Discharge rate" means the rate at which drainage water is released from a site. The discharge rate is expressed as volume per unit of time, such as cubic feet per second.

"DPD" means the Department of Planning and Development.

"Drainage basin" means the tributary area or subunit of a watershed through which drainage water is collected, regulated, transported, and discharged to receiving waters.

"Drainage control" means the management of drainage water. Drainage control is accomplished through one or more of the following: collecting, conveying, and discharging drainage water; controlling the discharge rate from a site; controlling the flow duration from a site; and separating, treating or preventing the introduction of pollutants.

"Drainage control facility" means any facility, including best management practices, installed or constructed for the purpose of controlling the discharge rate, flow duration, quantity, and/or quality of drainage water.

"Drainage control plan" means a plan for collecting, controlling, transporting and disposing of drainage water falling upon, entering, flowing within, and exiting the site, including designs for drainage control facilities.

"Drainage system" means a system intended to collect, convey and control release of only drainage water. The system may be either publicly or privately owned or operated, and the system may serve public or private property. It includes constructed and/or natural components such as pipes, ditches, culverts, streams, creeks, or drainage control facilities.

"Drainage water" means stormwater and all other discharges that are permissible per subsection 22.802.030.A.

(Ord. 123105, § 2, 2009.)

22.801.060 - "E"

"Earth material" means any rock, gravel, natural soil, fill, or re-sedimented soil, or any combination thereof, but does not include any solid waste as defined by RCW 70.95.

"Ecology" means the Washington State Department of Ecology.

"Effective impervious surface" means those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system.

"Enhanced treatment facility" means a drainage control facility designed to reduce concentrations of dissolved metals in drainage water.

"Environmentally critical area" means an area designated in Section 25.09.020.

"EPA" means the United States Environmental Protection Agency.

"Erosion" means the wearing away of the ground surface as a result of mass wasting or of the movement of wind, water, ice, or other geological agents, including such processes as gravitational creep. Erosion also means the detachment and movement of soil or rock fragments by water, wind, ice, or gravity.

"Excavation" means the mechanical removal of earth material.

"Exception" means relief from a requirement of this subtitle to a specific project.

(Ord. 123105, § 2, 2009.)

22.801.070 - "F"

"Fill" means a deposit of earth material placed by artificial means.

"Flow control" means controlling the discharge rate, flow duration, or both of drainage water from the site through means such as infiltration or detention.

"Flow control facility" means a drainage control facility for controlling the discharge rate, flow duration, or both of drainage water from a site.

"Flow-critical receiving water" means a surface water that is not a designated receiving water as defined in this subtitle.

"Flow duration" means the aggregate time that peak flows are at or above a particular flow rate of interest.

(Ord. 123105, § 2, 2009.)

22.801.080 - "G"

"Garbage" means putrescible waste.

"Geotechnical engineer" or "Geotechnical/civil engineer" means a professional civil engineer licensed by The State of Washington who has at least four years of professional experience as a geotechnical engineer, including experience with landslide evaluation.

"Grading" means excavation, filling, in-place ground modification, removal of roots or stumps that includes ground disturbance, stockpiling of earth materials, or any combination thereof, including the establishment of a grade following demolition of a structure.

"Green stormwater infrastructure" means a drainage control facility that uses infiltration, evapotranspiration, or stormwater reuse. Examples of green stormwater infrastructure include permeable pavement, bioretention facilities, and green roofs.

(Ord. 123105, § 2, 2009.)

22.801.090 - "H"

"High-use sites" means sites that typically generate high concentrations of oil due to high traffic turnover or the frequent transfer of oil. High-use sites include:

1. An area of a commercial or industrial site subject to an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area;
2. An area of a commercial or industrial site subject to petroleum storage and transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil;
3. An area of a commercial or industrial site subject to parking, storage or maintenance of 25 or more vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.);
4. A road intersection with a measured ADT count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements.

(Ord. 123105, § 2, 2009.)

22.801.100 - "I"

"Impervious Surface" means any surface exposed to rainwater from which most water runs off. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, formal planters, parking lots or storage areas, concrete or asphalt paving, permeable paving, gravel surfaces subjected to vehicular traffic, compact gravel, packed earthen materials, and oiled macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for the purposes of

determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of stormwater modeling.

Impervious surface, replaced. See "replaced or replacement of impervious surface."

"Infiltration" means the downward movement of water from the surface to the subsoil.

"Infiltration facility" means a drainage control facility that temporarily stores, and then percolates drainage water into the underlying soil.

"Integrated Drainage Plan" means a plan developed, reviewed, and approved per subsection 22.800.080.E.

"Interflow" means that portion of rainfall and other precipitation that infiltrates into the soil and moves laterally through the upper soil horizons until intercepted by a stream channel or until it returns to the surface.

"Inspector" means a City inspector, their designee, or licensed civil engineer performing the inspection work required by this subtitle.

(Ord. 123105, § 2, 2009.)

22.801.110 - "J"

"Joint project" means a project that is both a parcel-based project and a roadway project.

(Ord. 123105, § 2, 2009.)

22.801.130 - "L"

"Land disturbing activity" means any activity that results in a movement of earth, or a change in the existing soil cover, both vegetative and nonvegetative, or the existing topography. Land disturbing activities include, but are not limited to, clearing, grading, filling, excavation, or addition of new or the replacement of impervious surface. Compaction, excluding hot asphalt mix, that is associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices are not considered land disturbing activities.

"Large project" means a project including 5,000 square feet or more of new impervious surface or replaced impervious surface, individually or combined, or one acre or more of land disturbing activity.

"Listed creek basins" means Blue Ridge Creek, Broadview Creek, Discovery Park Creek, Durham Creek, Frink Creek, Golden Gardens Creek, Kiwanis Ravine/Wolfe Creek, Licton Springs Creek, Madrona Park Creek, Mee-Kwa-Mooks Creek, Mount Baker Park Creek, Puget Creek, Riverview Creek, Schmitz Creek, Taylor Creek, or Washington Park Creek.

(Ord. 123105, § 2, 2009.)

22.801.140 - "M"

"Master use permit" means a document issued by DPD giving permission for development or use of land or street right-of-way in accordance with Chapter 23.76.

"Maximum extent feasible" means the requirement is to be fully implemented, constrained only by the physical limitations of the site, practical considerations of engineering design, and reasonable considerations of financial costs and environmental impacts.

"Municipal stormwater NPDES permit" means the permit issued to the City under the federal Clean Water Act for public drainage systems within the City limits.

(Ord. 123105, § 2, 2009.)

22.801.150 - "N"

"Native vegetation" means "native vegetation" as defined in Section 25.09.520.

"Nutrient-critical receiving water" means a surface water or water segment that that has been listed as Category 5 (impaired) under Section 303(d) of the Clean Water Act for total phosphorus through the State of Washington's Water Quality Assessment program and approved by EPA.

"NPDES" means National Pollutant Discharge Elimination System, the national program for controlling discharges under the federal Clean Water Act.

"NPDES permit" means an authorization, license or equivalent control document issued by the United States Environmental Protection Agency or the Washington State Department of Ecology to implement the requirements of the NPDES program.

(Ord. 123105, § 2, 2009.)

22.801.160 - "O"

"Oil control treatment facility" means a drainage control facility designed to reduce concentrations of oil in drainage water.

"Owner" means any person having title to and/or responsibility for, a building or property, including a lessee, guardian, receiver or trustee, and the owner's duly authorized agent.

(Ord. 123105, § 2, 2009.)

22.801.170 - "P"

"Parcel-based project" means any project that is not a roadway project, single-family residential project, sidewalk project, or trail project.

"Person" means an individual, receiver, administrator, executor, assignee, trustee in bankruptcy, trust estate, firm, partnership, joint venture, club, company, joint stock company, business trust, municipal corporation, the State of Washington, political subdivision or agency of the State of Washington, public authority or other public body, corporation, limited liability company, association, society or any group of individuals acting as a unit, whether mutual, cooperative, fraternal, nonprofit or otherwise, and the United States or any instrumentality thereof.

"Pervious surface" means a surface that is not impervious. See also, "impervious surface".

"Phosphorus treatment facility" means a drainage control facility designed to reduce concentrations of phosphorus in drainage water.

"Plan" means a graphic or schematic representation, with accompanying notes, schedules, specifications and other related documents, or a document consisting of checklists, steps, actions, schedules, or other contents that has been prepared pursuant to this subtitle, such as a drainage control plan, construction stormwater control plan, stormwater pollution prevention plan, and integrated drainage plan.

"Pollution-generating activity" means any activity that is regulated by the joint SPU/DPD Directors' Rule titled, "Source Control Technical Requirements Manual" or activities with similar impacts on drainage water. These activities include, but are not limited to: cleaning and washing activities; transfer of liquid or solid material; production and application activities; dust, soil, and sediment control; commercial animal care and handling; log sorting and handling; boat building, mooring, maintenance, and repair; logging and tree removal; mining and quarrying of sand, gravel, rock, peat, clay, and other materials; cleaning and maintenance of swimming pool and spas; deicing and anti-icing operations for airports and streets; maintenance and management of roof and building drains at manufacturing and commercial buildings; maintenance and operation of railroad yards; maintenance of public and utility corridors and facilities; and maintenance of roadside ditches.

"Pollution-generating impervious surface" means those impervious surfaces considered to be a significant source of pollutants in drainage water. Such surfaces include those that are subject to:

vehicular use; certain industrial activities; or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall. Erodible or leachable materials, wastes, or chemicals are those substances which, when exposed to rainfall, measurably alter the physical or chemical characteristics of the drainage water. Examples include: erodible soils that are stockpiled; uncovered process wastes; manure; fertilizers; oily substances; ashes; kiln dust; and garbage dumpster leakage. Metal roofs are also considered to be PGIS unless they are coated with an inert, non-leachable material (e.g., baked-on enamel coating).

A surface, whether paved or not, shall be considered subject to vehicular use if it is regularly used by motor vehicles. The following are considered regularly-used surfaces: roads; unvegetated road shoulders; permeable pavement; bike lanes within the traveled lane of a roadway; driveways; parking lots; unfenced fire lanes; vehicular equipment storage yards; and airport runways.

The following are not considered regularly-used surfaces: paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles; fenced fire lanes; and infrequently used maintenance access roads.

"Pollution-generating pervious surface" means any non-impervious surface subject to use of pesticides and fertilizers or loss of soil, and typically includes lawns, landscaped areas, golf courses, parks, cemeteries, and sports fields.

"Pre-developed condition" means the vegetation and soil conditions that are used to determine the allowable post-development discharge peak flow rates and flow durations, such as pasture or forest.

"Project" means the addition or replacement of impervious surface or the undertaking of land disturbing activity on a site.

"Public combined sewer" means a publicly owned and maintained system which carries drainage water and wastewater and flows to a publicly owned treatment works.

"Public drainage system" means a drainage system owned or used by the City of Seattle.

"Public place" means and includes streets, avenues, ways, boulevards, drives, places, alleys, sidewalks, and planting (parking) strips, squares, triangles and right-of-way for public use and the space above or beneath its surface, whether or not opened or improved.

"Public sanitary sewer" means the sanitary sewer that is owned or operated by a City agency.

"Public storm drain" means the part of a public drainage system that is wholly or partially piped, owned or operated by a City agency, and designed to carry only drainage water.

(Ord. 123105, § 2, 2009.)

22.801.190 - "R"

"Real property" means "real property" as defined in Section 3.110.

"Receiving water" means the surface water or wetland receiving drainage water.

"Repeat Violation" means a prior violation of this subtitle within the preceding five years that became a final order or decision of the Director or a court. The violation does not need to be the same nor occur on one site to be considered repeat.

"Replaced impervious surface" or "replacement of impervious surface" means for structures, the removal and replacement of impervious surface down to the foundation. For other impervious surface, the impervious surface that is removed down to earth material and a new impervious surface is installed.

"Responsible party" means all of the following persons:

1. Owners, operators, and occupants of property; and,
2. Any person causing or contributing to a violation of the provisions of this subtitle.

"Right-of-way" means "right-of-way" as defined in Section 23.84A.032.

"Roadway" means "roadway" as defined in Section 23.84A.032.

"Roadway project" means a project located in the public right-of-way, that involves the creation of a new or replacement of an existing roadway, or that involves the creation of new or replacement of existing impervious surface.

"Runoff" means the portion of rainfall or other precipitation that becomes surface flow and interflow.

(Ord. 123105, § 2, 2009.)

22.801.200 - "S"

"SPU" means Seattle Public Utilities.

"Sanitary sewer" means a system that conveys wastewater and is not designed to convey stormwater.

"SDOT" means the Seattle Department of Transportation.

"Service drain" means "service drain" as defined in Section 21.16.030.

"Side sewer" means "side sewer" as defined in Section 21.16.030.

"Sidewalk" means "sidewalk" as defined in Section 23.84A.036.

"Sidewalk project" means a project that exclusively involves the creation of a new or replacement of an existing sidewalk, including any associated planting strip, curb, or gutter.

"Single-family residential project" means a project, that constructs one Single-family Dwelling Unit per Section 23.44.006.A located in land classified as being Single-family Residential 9,600 (SF 9600), Single-family Residential 7,200 (SF 7200), or Single-family Residential 5,000 (SF 5000) per Section 23.30.010, and the total new plus replaced impervious surface is less than 10,000 square feet and the total new plus replaced pollution-generating impervious surface is less than 5,000 square feet.

"Site" means the lot or parcel, or portion of street, highway or other right-of-way, or contiguous combination thereof, where a permit for the addition or replacement of impervious surface or the undertaking of land disturbing activity has been issued or where any such work is proposed or performed. For roadway projects, the length of the project site and the right-of-way boundaries define the site.

"Slope" means an inclined ground surface.

"Small project" means a project with:

1. Less than 5,000 square feet of new and replaced impervious surface; and
2. Less than one acre of land disturbing activities.

"SMC" means the Seattle Municipal Code.

"Soil" means naturally deposited non-rock earth materials.

"Solid waste" means "solid waste" as defined in Section 21.36.016.

"Source controls" mean structures or operations that prevent contaminants from coming in contact with drainage water through physical separation or careful management of activities that are known sources of pollution.

"Standard design" is a design pre-approved by the Director for drainage and erosion control available for use at a site with pre-defined characteristics.

"Storm drain" means both public storm drain and service drain.

"Stormwater" means that portion of precipitation and snowmelt that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes and other features of a drainage system into a receiving water or a constructed infiltration facility.

"Stream" means a Type 2-5 water as defined in WAC 222-16-031. Used synonymously with "creek."

(Ord. 123105, § 2, 2009.)

22.801.210 - "T"

"Topsoil" means the weathered surface soil, including the organic layer, in which plants have most of their roots.

"Trail" means a path of travel for recreation and/or transportation within a park, natural environment, or corridor that is not classified as a highway, road, or street.

"Trail project" means a project that exclusively involves creating a new or replacement of an existing trail, and which does not contain pollution-generating impervious surfaces.

"Treatment facility" means a drainage control facility designed to remove pollutants from drainage water.

(Ord. 123105, § 2, 2009.)

22.801.220 - "U"

"Uncontaminated" means surface water or groundwater not containing sediment or other pollutants or contaminants above natural background levels and not containing pollutants or contaminants in levels greater than City-supplied drinking water when referring to potable water.

(Ord. 123105, § 2, 2009.)

22.801.230 - "V"

"Vegetation" means "vegetation" as defined in Section 25.09.520.

(Ord. 123105, § 2, 2009.)

22.801.240 - "W"

"Wastewater" means "wastewater" as defined in Section 21.16.030.

"Water Quality Standards" means Surface Water Quality Standards, Chapter 173-201A WAC, Ground Water Quality Standards, Chapter 173-200 WAC, and Sediment Management Standards, Chapter 173-204 WAC.

"Watercourse" means the route, constructed or formed by humans or by natural processes, generally consisting of a channel with bed, banks or sides, in which surface waters flow. Watercourse includes small lakes, bogs, streams, creeks, and intermittent artificial components (including ditches and culverts) but does not include designated receiving waters.

"Watershed" means a geographic region within which water drains into a particular river, stream, or other body of water.

"Wetland" means a wetland designated under Section 25.09.020.

"Wetland function" means the physical, biological, chemical, and geologic interactions among different components of the environment that occur within a wetland. Wetland functions can be grouped into three categories: functions that improve water quality; functions that change the water regime in a watershed, such as flood storage; and functions that provide habitat for plants and animals.

"Wetland values" means wetland processes, characteristics, or attributes that are considered to benefit society.

(Ord. 123105, § 2, 2009.)

Chapter 22.802 - PROHIBITED AND PERMISSIBLE DISCHARGES
Sections:

22.802.010 - General

- A. No discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, may cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.
- B. Every permit issued to implement this subtitle shall contain a performance standard requiring that no discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.

(Ord. 123105, § 2, 2009.)

22.802.020 - Prohibited Discharges

- A. Prohibited Discharges. The following common substances are prohibited to enter, either directly or indirectly, a public drainage system, a private drainage system, or a receiving water within or contiguous to Seattle city limits, including but not limited to when entering via a service drain, overland flow, or as a result of a spill or deliberate dumping:
 - 1. acids;
 - 2. alkalis including cement wash water;
 - 3. ammonia;
 - 4. animal carcasses;
 - 5. antifreeze, oil, gasoline, grease and all other automotive and petroleum products;
 - 6. chemicals not normally found in uncontaminated water;
 - 7. chlorinated swimming pool or hot tub water;
 - 8. chlorine;
 - 9. commercial and household cleaning materials;
 - 10. detergent;
 - 11. dirt;
 - 12. domestic or sanitary sewage;
 - 13. drain cleaners;
 - 14. fertilizers;
 - 15. flammable or explosive materials;
 - 16. food and food waste;
 - 17. gravel.
 - 18. herbicides;
 - 19. human and animal waste;
 - 20. industrial process wastewater,
 - 21. ink;
 - 22. laundry waste;
 - 23. metals in excess of naturally occurring amounts, whether in liquid or solid form;

24. painting products;
 25. pesticides;
 26. sand;
 27. soap;
 28. solid waste;
 29. solvents and degreasers;
 30. steam-cleaning waste; and,
 31. yard waste.
- B. Prohibited Discharges to Public and Private Drainage System. Except as provided in Section 22.802.030, any discharge to a public drainage system or to a private drainage system that is not composed entirely of stormwater is prohibited.
- C. Prohibited Discharges to Receiving Waters. Except as provided in Section 22.802.030, any discharge, either directly or indirectly to receiving waters within or contiguous to Seattle city limits or to a public drainage system that is not composed entirely of stormwater is prohibited.

(Ord. 123105, § 2, 2009.)

22.802.030 - Permissible Discharges

Permissible Discharges to Drainage Systems and Receiving Waters. Discharges from the sources listed below are permissible discharges unless the Director of SPU determines that the type of discharge, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, whether singly or in combination with others, is causing or contributing to a violation of the City's NPDES stormwater permit or is causing or contributing to a water quality problem:

1. Discharges from potable water sources, including flushing of potable water lines, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the drainage system;
2. Discharges from washing or rinsing of potable water storage reservoirs, dechlorinated as above;
3. Discharges from surface waters, including diverted stream flows;
4. Discharges of uncontaminated groundwater, including uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(2), uncontaminated pumped groundwater, and rising ground waters;
5. Discharges of air conditioning condensation;
6. Discharges from springs;
7. Discharges of uncontaminated water from crawl space pumps;
8. Discharges from lawn watering;
9. Discharges from irrigation runoff, including irrigation water from agricultural sources that is commingled with stormwater and that does not contain prohibited substances;
10. Discharges from riparian habitats and wetlands;
11. Discharges from approved footing drains and other subsurface drains or, where approval is not required, installed in compliance with this subtitle and rules promulgated pursuant to this subtitle;
12. Discharges from foundation drains;

13. Discharges from swimming pools, hot tubs, fountains, or similar aquatic recreation facilities and constructed water features, provided the discharges have been de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the drainage control system;
 14. Discharges of street and sidewalk wash-water that does not use detergents or chemical additives;
 15. Discharges of water used to control dust;
 16. Discharges of water from routine external building washdown that does not use detergents or chemical additives;
 17. Discharges that are in compliance with a separate individual or general NPDES permit;
 18. Discharges that are from emergency fire fighting activities; and
 19. Other non-stormwater discharges, provided these discharges are in compliance with the requirements of an approved stormwater pollution prevention plan that addresses such discharges.
- B. Permissible Discharges to Sanitary Sewers. In consultation with the local sewage treatment agency, the Director of SPU may approve discharges of drainage water to a sanitary sewer if the discharging party demonstrates to the satisfaction of the Director of SPU that other methods of controlling pollutants in the discharge are not adequate or reasonable, the discharging party certifies that the discharge will not harm the environment, and the discharging party certifies that the discharge will not overburden or otherwise harm the sanitary sewer. Connections to the sanitary sewer shall be made in accordance with Chapter 21.16 (Side Sewer Code). The Director of SPU shall condition approval of such a discharge on compliance with local pretreatment regulations and on maintaining compliance with the required certifications given by the discharging party.
- C. Permissible Discharges to Public Combined Sewers. In consultation with the local sewage treatment agency, the Director of SPU may approve discharges of drainage water to a public combined sewer if the discharging party certifies that the discharge will not harm the environment, and the discharging party certifies that the discharge will not overburden or otherwise harm the public combined sewers. Connections to the public combined sewers shall be made in accordance with Chapter 21.16 (Side Sewer Code). The Director of SPU shall condition approval of such a discharge on compliance with local pretreatment regulations and on maintaining compliance with the required certifications given by the discharging party.

(Ord. 123105, § 2, 2009.)

22.802.040 - Testing for Prohibited Discharges

When the Director of SPU has reason to believe that any discharge is a prohibited discharge, the Director of SPU may sample and analyze the discharge and recover the costs from a responsible party in an enforcement proceeding. When the discharge is likely to be a prohibited discharge on a recurring basis, the Director of SPU may conduct, or may require the responsible party to conduct, ongoing monitoring at the responsible party's expense.

(Ord. 123105, § 2, 2009.)

Chapter 22.803 - MINIMUM REQUIREMENTS FOR ALL DISCHARGES AND ALL REAL PROPERTY Sections:

22.803.010 - General

- A. All responsible parties are required to comply with this chapter, even where no development is occurring.

- B. No discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, may cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.
- C. Every permit issued to implement this subtitle shall contain a performance standard requiring that no discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.

(Ord. 123105, § 3, 2009.)

22.803.020 - Minimum Requirements for All Discharges and Real Property

- A. Requirement to provide documentation. The owner is required to make plans, procedures, and schedules required by this subsection available to the Director of SPU when requested.
- B. Requirement to report spills, releases, or dumping. A responsible party is required to, at the earliest possible time, but in any case within 24 hours of discovery, report to the Director of SPU, a spill, release, dumping, or other situation that has contributed or is likely to contribute pollutants to a public drainage system, a private drainage system, or a receiving water. This reporting requirement is in addition to, and not instead of, any other reporting requirements under federal, state or local laws.
- C. Requirements to maintain facilities. All treatment facilities, flow control facilities, drainage control facilities, and drainage systems shall be maintained as prescribed in rules promulgated by the Director in order for these facilities and systems to be kept in continuous working order.
- D. Requirements for disposal of waste from maintenance activities. Disposal of waste from maintenance of drainage control facilities shall be conducted in accordance with federal, state and local regulations, including the Minimum Functional Standards for Solid Waste Handling, Chapter 173-304 WAC, guidelines for disposal of waste materials, and, where appropriate, Dangerous Waste Regulations, Chapter 173-303 WAC.
- E. Requirements to maintain records of installation and maintenance activities. When a drainage control facility is installed, the party having the facility installed shall make records of the installation and shall identify the party (or parties) responsible for maintenance and operations. The parties shall retain a continuous record of all maintenance and repair activities, and shall retain the records for at least ten years. If a transfer of ownership occurs, these records of installation, repair, and maintenance shall be transferred to the new property owner. These records shall be made available to the Director of SPU during inspection of the facility and at other reasonable times upon request of the Director of SPU.

(Ord. 123105, § 3, 2009.)

22.803.030 - Minimum Requirements for Source Controls for All Real Property

For all discharges, responsible parties shall implement and maintain source controls to prevent or minimize pollutants from leaving a site or property. Source controls that are required for all real property include, but are not limited to, the following, as further described in rules promulgated by the Director:

- A. Eliminate Illicit or Prohibited Connections to Storm Drains. It is the responsibility of the property owner to ensure that all plumbing connections are properly made and that only connections conveying stormwater or permissible discharges per Section 22.802.030 are connected to the drainage system.
- B. Perform Routine Maintenance for Stormwater Drainage System. All drainage system components, including, but not limited to catch basins, flow control facilities, treatment facilities, green stormwater infrastructure, and unimproved drainage pathways shall be kept in continuously working order.

- C. Dispose of Fluids and Wastes Properly. Solid and liquid wastes must be disposed of in a manner that minimizes the risk of contaminating stormwater.
- D. Proper Storage of Solid Wastes. Solid wastes must be stored of in a manner that minimizes the risk of contaminating stormwater.
- E. Spill Prevention and Cleanup. All property owners having the potential to spill pollutants shall take measures to the maximum extent feasible to prevent spills of pollutant and to properly clean up spills that may occur.
- F. Provide Oversight and Training for Staff. Train at least annually all employees responsible for the operation, maintenance, or inspection of BMPs.

(Ord. 123105, § 3, 2009.)

22.803.040 - Minimum Requirements for Source Controls For All Businesses and Public Entities

- A. Source controls shall be implemented, to the extent allowed by law, by all businesses and public entities for specific pollution-generating activities as specified in the joint SPU/DPD Directors' Rule, "Source Control Technical Requirements Manual," to the extent necessary to prevent prohibited discharges as described in subsection 22.802.020.A through subsection 22.802.020.C, and to prevent contaminants from coming in contact with drainage water. Source controls include, but are not limited to, segregating or isolating wastes to prevent contact with drainage water; enclosing, covering, or containing the activity to prevent contact with drainage water; developing and implementing inspection and maintenance programs; sweeping; and taking management actions such as training employees on pollution prevention.
- B. Spill prevention shall be required for all businesses and public entities, as further defined in rules promulgated by the Director:
 - 1. Develop and implement plans and procedures to prevent spills and other accidental releases of materials that may contaminate drainage water. This requirement may be satisfied by a Stormwater Pollution Prevention Plan prepared in compliance with an NPDES industrial stormwater permit for the site; and
 - 2. Implement procedures for immediate containment and other appropriate action regarding spills and other accidental releases to prevent contamination of drainage water; and
 - 3. Provide necessary containment and response equipment on-site, and training of personnel regarding the procedures and equipment to be used.

(Ord. 123105, § 3, 2009.)

Chapter 22.805 - MINIMUM REQUIREMENTS FOR ALL PROJECTS

Sections:

22.805.010 - General

- A. All projects are required to comply with this chapter, even where drainage control review is not required.
- B. No discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, may cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.
- C. Every permit issued to implement this subtitle shall contain a performance standard requiring that no discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits,

cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.

(Ord. 123105, § 3, 2009.)

22.805.020 - Minimum requirements for all projects

- A. Minimum Requirements for Maintaining Natural Drainage Patterns. For all projects, natural drainage patterns shall be maintained and discharges shall occur at the natural location to the maximum extent feasible and consistent with subsection 22.805.020.B. Drainage water discharged from the site shall not cause a significant adverse impact to receiving waters or down-gradient properties. Drainage water retained on the site shall not cause significant adverse impact to up-gradient properties.
- B. Minimum Requirements for Discharge Point. The discharge point for drainage water from each site shall be selected using criteria that shall include, but not be limited to, preservation of natural drainage patterns and whether the capacity of the drainage system is adequate for the flow rate and volume. For those projects meeting the drainage review threshold, the proposed discharge point shall be identified in the drainage control plan required by this subtitle, for review and approval or disapproval by the Director.
- C. Minimum Requirements for Flood-prone Areas. On sites within flood prone areas, responsible parties are required to employ procedures to minimize the potential for flooding on the site and to minimize the potential for the project to increase the risk of floods on adjacent or nearby properties. Flood control measures shall include those set forth in other titles of the Seattle Municipal Code and rules promulgated thereunder, including, but not limited to, Chapter 23.60 (Shoreline Master Program), Chapter 25.06 (Floodplain Development) and Chapter 25.09 (Environmentally Critical Areas) of the Seattle Municipal Code.
- D. Minimum Requirements for Construction Site Stormwater Pollution Prevention Control. Temporary and permanent construction controls shall be used to accomplish the following minimum requirements. All projects are required to meet each of the elements below or document why an element is not applicable. Additional controls may be required by the Director when minimum controls are not sufficient to prevent erosion or transport of sediment or other pollutants from the site.
 - 1. Mark Clearing Limits and Environmentally Critical Areas. Within the boundaries of the project site and prior to beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, easements, setbacks, all environmentally critical areas and their buffers, and all trees, and drainage courses that are to be preserved within the construction area.
 - 2. Retain Top Layer. Within the boundaries of the project site, the duff layer, topsoil, and native vegetation, if there is any, shall be retained in an undisturbed state to the maximum extent feasible. If it is not feasible to retain the top layer in place, it should be stockpiled on-site, covered to prevent erosion, and replaced immediately upon completion of the ground disturbing activities to the maximum extent feasible.
 - 3. Establish Construction Access. Limit construction vehicle access, whenever possible, to one route. Stabilize access points and minimize tracking sediment onto public roads. Promptly remove any sediment tracked off site.
 - 4. Protect Downstream Properties and Receiving Waters. Protect properties and receiving waters downstream from the development sites from erosion due to increases in the volume, velocity, and peak flow rate of drainage water from the project site. If it is necessary to construct flow control facilities to meet this requirement, these facilities shall be functioning prior to implementation of other land disturbing activity. If permanent infiltration ponds are used to control flows during construction, these facilities shall be protected from siltation during the construction phase of the project.
 - 5. Prevent Erosion and Sediment Transport from the Site. Pass all drainage water from disturbed areas through a sediment trap, sediment pond, or other appropriate sediment removal BMP

before leaving the site or prior to discharge to an infiltration facility. Sediment controls intended to trap sediment on site shall be constructed as one of the first steps in grading and shall be functional before other land disturbing activities take place. BMPs intended to trap sedimentation shall be located in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.

6. Prevent Erosion and Sediment Transport from the Site by Vehicles. Whenever construction vehicle access routes intersect paved roads, the transport of sediment onto the paved road shall be minimized. If sediment is transported onto a paved road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from paved roads by shoveling or sweeping and shall be transported to a controlled sediment disposal area. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or at least twice daily during wet weather. Street washing is allowed only after sediment is removed and street wash wastewater shall be prevented from entering the public drainage system and receiving waters.
7. Stabilize Soils. Prevent on-site erosion by stabilizing all exposed and unworked soils, including stock piles and earthen structures such as dams, dikes, and diversions. From October 1 to April 30, no soils shall remain exposed and unworked for more than two days. From May 1 to September 30, no soils shall remain exposed for more than seven days. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast. Soil stockpiles shall be stabilized from erosion, protected with sediment trapping measures, and be located away from storm drain inlets, waterways, and drainage channels. Before the completion of the project, permanently stabilize all exposed soils that have been disturbed during construction.
8. Protect Slopes. Erosion from slopes shall be minimized. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Off-site stormwater run-on or groundwater shall be diverted away from slopes and undisturbed areas with interceptor dikes, pipes, and/or swales. Pipe slope drains or protected channels shall be constructed at the top of slopes to collect drainage and prevent erosion. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations. Check dams shall be placed at regular intervals within constructed channels that are cut down a slope.
9. Protect Storm Drains. Prevent sediment from entering all storm drains, including ditches that receive drainage water from the project. Storm drain inlets protection devices shall be cleaned or removed and replaced as recommended by the product manufacturer, or more frequently if required to prevent failure of the device or flooding. Storm drain inlets made operable during construction shall be protected so that drainage water does not enter the drainage system without first being filtered or treated to remove sediments. Storm drain inlet protection devices shall be removed at the conclusion of the project. When manufactured storm drain inlet protection devices are not feasible, inlets and catch basins must be cleaned as necessary to prevent sediment from entering the drainage control system.
10. Stabilize Channels and Outlets. All temporary on-site drainage systems shall be designed, constructed, and stabilized to prevent erosion. Stabilization shall be provided at the outlets of all drainage systems that is adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches.
11. Control Pollutants. Measures shall be taken to control potential pollutants that include, but are not limited to, the following measures:
 - a. All pollutants, including sediment, waste materials, and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of drainage water and per all applicable disposal laws.
 - b. Containment, cover, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment.

- c. On-site fueling tanks shall include secondary containment.
 - d. Maintenance, fueling, and repair of heavy equipment and vehicles involving oil changes, hydraulic system drain down, solvent and de-greasing cleaning operations, fuel tank drain down and removal, and other activities which may result in discharge or spillage of pollutants to the ground or into drainage water runoff shall be conducted using spill prevention and control measures.
 - e. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.
 - f. Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer or combined sewer system with approval of the Director of SPU. Temporary discharges or connections to the public sanitary and combined sewers shall be made in accordance with Chapter 21.16 (Side Sewer Code).
 - g. Application of fertilizers and pesticides shall be conducted in a manner and at application rates that will not result in loss of chemical to drainage water. Manufacturers' label requirements for application rates and procedures shall be followed.
 - h. BMPs shall be used to prevent or treat contamination of drainage water by pH-modifying sources. These sources include, but are not limited to, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, and concrete pumping and mixer washout waters. Construction site operators may be required to adjust the pH of drainage water if necessary to prevent a violation of water quality standards. Construction site operators must obtain written approval from Ecology prior to using chemical treatment other than carbon dioxide (CO₂) or dry ice to adjust pH.
12. Control Dewatering. When dewatering devices discharge on site or to a public drainage system, dewatering devices shall discharge into a sediment trap, sediment pond, gently sloping vegetated area of sufficient length to remove sediment contamination, or other sediment removal BMP. Foundation, vault, and trench dewatering waters must be discharged into a controlled drainage system prior to discharge to a sediment trap or sediment pond. Clean, non-turbid dewatering water, such as well-point ground water, that is discharged to systems tributary to state surface waters must not cause erosion or flooding. Highly turbid or contaminated dewatering water shall be handled separately from drainage water. For any project with an excavation depth of 12 feet or more below the existing grade and for all large projects, dewatering flows must be determined and it must be verified that there is sufficient capacity in the public drainage system and public combined sewer prior to discharging.
13. Maintain BMPs. All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. All temporary erosion and sediment controls shall be removed within five days after final site stabilization is achieved or after the temporary controls are no longer needed, whichever is later. Trapped sediment shall be removed or stabilized on site. Disturbed soil areas resulting from removal shall be permanently stabilized.
14. Inspect BMPs. BMPs shall be periodically inspected. For projects with 5,000 square feet or more of new plus replaced impervious surface or 7,000 square feet or more of land disturbing activity, site inspections shall be conducted by a Certified Erosion and Sediment Control Lead who shall be identified in the Construction Stormwater Control Plan and shall be present on-site or on-call at all times.
15. Execute Construction Stormwater Control Plan. Construction site operators shall maintain, update, and implement their Construction Stormwater Control Plan. Construction site operators shall modify their Construction Stormwater Control Plan to maintain compliance whenever there is a change in design, construction, operation, or maintenance at the site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.

16. Minimize Open Trenches. In the construction of underground utility lines, where feasible, no more than 150 feet of trench shall be opened at one time, unless soil is replaced within the same working day, and where consistent with safety and space considerations, excavated material shall be placed on the uphill side of trenches. Trench dewatering devices shall discharge into a sediment trap or sediment pond.
 17. Phase the Project. Development projects shall be phased to the maximum extent feasible in order to minimize the amount of land disturbing activity occurring at the same time and shall take into account seasonal work limitations.
 18. Install Permanent Flow Control and Water Quality Facilities. Development projects required to comply with Section 22.805.080 (Minimum Requirements for Flow Control) or Section 22.805.090 (Minimum Requirements for Treatment) shall install permanent flow control and water quality facilities.
- E. Minimum Requirement to Amend Soils. Prior to completion of the project all new, replaced, and disturbed topsoil shall be amended with organic matter per rules promulgated by the Director to improve onsite management of drainage water flow and water quality.
 - F. Implement Green Stormwater Infrastructure. All Single-family residential projects and all other projects with 7,000 square feet or more of land disturbing activity or 2,000 square feet or more of new plus replaced impervious surface must implement green stormwater infrastructure to infiltrate, disperse, and retain drainage water onsite to the maximum extent feasible without causing flooding, landslide, or erosion impacts.
 - G. Protect Wetlands. All projects discharging into a wetland or its buffer, either directly or indirectly through a drainage system, shall prevent impacts to wetlands that would result in a net loss of functions or values.
 - H. Protect Streams and Creeks. All projects, including projects discharging directly to a stream or creek, or to a drainage system that discharges to a stream or creek, shall maintain the water quality in any affected stream or creek by selecting, designing, installing, and maintaining temporary and permanent controls.
 - I. Protect Shorelines. All projects discharging directly or indirectly through a drainage system into the Shoreline District as defined in Chapter 23.60A shall prevent impacts to water quality and stormwater quantity that would result in a net loss of shoreline ecological functions as defined in WAC 173-26-020 (11).
 - J. Ensure Sufficient Capacity. All large projects, all projects with an excavation depth of 12 feet or more below the existing grade, and all projects with an excavation depth of less than 12 feet located in an area expected to have shallow groundwater depths shall ensure that sufficient capacity exists in the public drainage system and public combined sewer to carry existing and anticipated loads, including any flows from dewatering activities. Capacity analysis shall extend to at least ¼-mile from the discharge point of the site. Sites at which there is insufficient capacity may be required to install a flow control facility or improve the drainage system or public combined sewer to accommodate flow from the site. Unless approved otherwise by the Director as necessary to meet the purposes of this subtitle:
 1. Capacity analysis for discharges to the public drainage system shall be based on peak flows with a 4% annual probability (25-year recurrence interval); and
 2. Capacity analysis for discharges to the public combined sewer shall be based on peak flows with a 20% annual probability (5-year recurrence interval).
 - K. Install Source Control BMPs. Source control BMPs shall be installed for specific pollution-generating activities as specified in the joint SPU/DPD Directors' Rule, "Source Control Technical Requirements Manual," to the extent necessary to prevent prohibited discharges as described in Section 22.802.020, and to prevent contaminants from coming in contact with drainage water. This requirement applies to the pollution-generating activities that are stationary or occur in one primary

location and to the portion of the site being developed. Examples of installed source controls include, but are not limited to, the following:

1. A roof, awning, or cover erected over the pollution-generating activity area;
 2. Ground surface treatment in the pollution-generating activity area to prevent interaction with, or breakdown of, materials used in conjunction with the pollution-generating activity;
 3. Containment of drainage from the pollution-generating activity to a closed sump or tank. Contents of such a sump or tank must be pumped or hauled by a waste handler, or treated prior to discharge to a public drainage system.
 4. Construct a berm or dike to enclose or contain the pollution-generating activities;
 5. Direct drainage from containment area of pollution-generating activity to a closed sump or tank for settling and appropriate disposal, or treat prior to discharging to a public drainage system;
 6. Pave, treat, or cover the containment area of pollution-generating activities with materials that will not interact with or break down in the presence of other materials used in conjunction with the pollution-generating activity; and
 7. Prevent precipitation from flowing or being blown onto containment areas of pollution-generating activities.
- L. Do not obstruct watercourses. Watercourses shall not be obstructed.
- M. Comply with Side Sewer Code.
1. All privately owned and operated drainage control facilities or systems, whether or not they discharge to a public drainage system, shall be considered side sewers and subject to Chapter 21.16 (Side Sewer Code), SPU Director's Rules promulgated under Title 21, and the design and installation specifications and permit requirements of SPU and DPD for side sewer and drainage systems.
 2. Side sewer permits and inspections shall be required for constructing, capping, altering, or repairing privately owned and operated drainage systems as provided for in Chapter 21.16. When the work is ready for inspection, the permittee shall notify the Director of DPD. If the work is not constructed according to the plans approved under this subtitle, Chapter 21.16, the SPU Director's Rules promulgated under Title 21, and SPU and DPD design and installation specifications, then SPU, after consulting with DPD, may issue a stop work order under Chapter 22.808 and require modifications as provided for in this subtitle and Chapter 21.16.

(Ord. [124105](#), § 7, 2013; Ord. 123105, § 3, 2009.)

22.805.030 - Minimum Requirements for Single-Family Residential Projects

All single-family residential projects shall implement green stormwater infrastructure to the maximum extent feasible.

(Ord. 123105, § 3, 2009.)

22.805.040 - Minimum Requirements for Trail and Sidewalk Projects

All trail and sidewalk projects with 2,000 square feet or more of new plus replaced impervious surface or 7,000 square feet or more of land disturbing activity shall implement green stormwater infrastructure to the maximum extent feasible.

(Ord. 123105, § 3, 2009.)

22.805.050 - Minimum Requirements for Parcel-Based Projects

- A. Flow Control. Parcel-based projects shall meet the minimum requirements for flow control contained in Section 22.805.080, to the extent allowed by law, as prescribed below.

1. Discharges to Wetlands. Parcel-based projects discharging into a wetland shall comply with subsection 22.805.080.B.1 (Wetland Protection Standard) if:
 - a. The total new plus replaced impervious surface is 5,000 square feet or more; or
 - b. The project converts $\frac{3}{4}$ -acres or more of native vegetation to lawn or landscaped areas and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - c. The project converts 2.5 acres or more of native vegetation to pasture and from which there is a surface discharge into a natural or man-made conveyance system from the site.
2. Discharges to Listed Creek Basins. Parcel-based projects discharging into Blue Ridge Creek, Broadview Creek, Discovery Park Creek, Durham Creek, Frink Creek, Golden Gardens Creek, Kiwanis Ravine/Wolfe Creek, Licton Springs Creek, Madrona Park Creek, Mee-Kwa-Mooks Creek, Mount Baker Park Creek, Puget Creek, Riverview Creek, Schmitz Creek, Taylor Creek, or Washington Park Creek shall:
 - a. Comply with subsection 22.805.080.B.2 (Pre-developed Forested Standard) if the existing impervious coverage is less than 35 percent and one or more of the following apply:
 - 1) The project adds 5,000 square feet or more of new impervious surface and the total new plus replaced impervious surface is 10,000 square feet or more; or
 - 2) The project converts $\frac{3}{4}$ acres or more of native vegetation to lawn or landscaped areas and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 3) The project converts 2.5 acres or more of native vegetation to pasture and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 4) The project adds 5,000 square feet or more of new impervious surface and, through a combination of effective impervious surfaces and converted pervious surfaces, causes a 0.1 cubic feet per second increase in the 100-year recurrence interval flow frequency as estimated using a continuous model approved by the Director.
 - b. Comply with subsection 22.805.080.B.3 (Pre-developed Pasture Standard) if the criteria in subsection 22.805.050.A.2.a do not apply and the total new plus replaced impervious surface is 2,000 square feet or more.
3. Discharges to Non-listed Creek Basins. Parcel-based projects discharging into a creek not listed in subsection 22.805.050.A.2 shall:
 - a. Comply with subsection 22.805.080.B.2 (Pre-developed Forested Standard) if the existing land cover is forested and one or more of the following apply:
 - 1) The project adds 5,000 square feet or more of new impervious surface and the total new plus replaced impervious surface is 10,000 square feet or more; or
 - 2) The project converts $\frac{3}{4}$ acres or more of native vegetation to lawn or landscaped areas and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 3) The project converts 2.5 acres or more of native vegetation to pasture and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 4) The project adds 5,000 square feet or more of new impervious surface and, through a combination of effective impervious surfaces and converted pervious surfaces, causes a 0.1 cubic feet per second increase in the 100-year recurrence interval flow frequency as estimated using a continuous model approved by the Director.

- b. Comply with subsection 22.805.080.B.3 (Pre-developed Pasture Standard) if the criteria in subsection 22.805.050.A.3.a do not apply and the total new plus replaced impervious surface is 2,000 square feet or more.
 - 4. Discharges to Small Lake Basins. Parcel-based projects discharging into Bitter Lake, Green Lake, or Haller Lake drainage basins shall comply with subsection 22.805.080.B.4 (Peak Control Standard) if the total new plus replaced impervious surface is 2,000 square feet or more.
 - 5. Discharges to Public Combined Sewer. Unless the Director of SPU has exercised its discretion to determine and has determined that the public combined sewer has sufficient capacity to carry existing and anticipated loads, parcel-based projects discharging into the public combined sewer shall comply with subsection 22.805.080.B.4 (Peak Control Standard) if the total new plus replaced impervious surface is 10,000 square feet or more.
 - 6. Discharges to a Capacity-constrained System. In addition to applicable minimum requirements for flow control in subsection 22.805.050.A.1 through subsection 22.805.050.A.5, parcel-based projects discharging into a capacity-constrained system shall also comply with subsection 22.805.080.B.4 (Peak Control Standard) if the total new plus replaced impervious surface is 2,000 square feet or more.
- B. Treatment. Parcel-based projects not discharging to the public combined sewer shall comply with the minimum requirements for treatment contained in Section 22.805.090, to the extent allowed by law, if:
- 1. The total new plus replaced pollution-generating impervious surface is 5,000 square feet or more; or
 - 2. The total new plus replaced pollution-generating pervious surfaces is $\frac{3}{4}$ of an acre or more and from which there is a surface discharge in a natural or man-made conveyance system from the site.

(Ord. [124758](#), § 2, 2015; Ord. 123105, § 3, 2009.)

22.805.060 - Minimum Requirements for Roadway Projects

- A. Flow Control. Roadway projects shall meet the minimum requirements for flow control contained in Section 22.805.080, to the extent allowed by law, as prescribed below.
- 1. Discharges to Wetlands. Roadway projects discharging into a wetland shall comply with subsection 22.805.080.B.1 (Wetland Protection Standard) if:
 - a. The total new plus replaced impervious surface is 5,000 square feet or more; or
 - b. The project converts $\frac{3}{4}$ acres or more of native vegetation to lawn or landscaped areas and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - c. The project converts 2.5 acres or more of native vegetation to pasture and from which there is a surface discharge into a natural or man-made conveyance system from the site.
 - 2. Discharges to Listed Creek Basins. Roadway projects discharging into Blue Ridge Creek, Broadview Creek, Discovery Park Creek, Durham Creek, Frink Creek, Golden Gardens Creek, Kiwanis Ravine/Wolfe Creek, Licton Springs Creek, Madrona Park Creek, Mee-Kwa-Mooks Creek, Mount Baker Park Creek, Puget Creek, Riverview Creek, Schmitz Creek, Taylor Creek, or Washington Park Creek shall:
 - a. Comply with subsection 22.805.080.B.2 (Pre-developed Forested Standard) if the existing impervious coverage is less than 35 percent and one or more of the following apply:
 - 1) The project adds 5,000 square feet or more of new impervious surface and the total new plus replaced impervious surface is 10,000 square feet or more; or

- 2) The project converts $\frac{3}{4}$ acres or more of native vegetation to lawn or landscaped areas and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 3) The project converts 2.5 acres or more of native vegetation to pasture and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 4) The project adds 5,000 square feet or more of new impervious surface and, through a combination of effective impervious surfaces and converted pervious surfaces, causes a 0.1 cubic feet per second increase in the 100-year recurrence interval flow frequency as estimated using a continuous model approved by the Director.
- b. Comply with subsection 22.805.080.B.3 (Pre-developed Pasture Standard) if the criteria in subsection 22.805.060.A.2.a do not apply and the total new plus replaced impervious surface is 10,000 square feet or more.
3. Discharges to Non-listed Creek Basins. Roadway projects discharging into a creek not listed in subsection 22.805.060.A.2 shall:
 - a. Comply with subsection 22.805.080.B.2 (Pre-developed Forested Standard) if the existing land cover is forested and one or more of the following apply:
 - 1) The project adds 5,000 square feet or more of new impervious surface and the total new plus replaced impervious surface is 10,000 square feet or more; or
 - 2) The project converts $\frac{3}{4}$ acres or more of native vegetation to lawn or landscaped areas and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 3) The project converts 2.5 acres or more of native vegetation to pasture and from which there is a surface discharge into a natural or man-made conveyance system from the site; or
 - 4) The project adds 5,000 square feet or more of new impervious surface and, through a combination of effective impervious surfaces and converted pervious surfaces, causes a 0.1 cubic feet per second increase in the 100-year recurrence interval flow frequency as estimated using a continuous model approved by the Director.
 - b. Comply with subsection 22.805.080.B.3 (Pre-developed Pasture Standard) if the criteria in subsection 22.805.060.A.3.a do not apply and the total new plus replaced impervious surface is 10,000 square feet or more.
 4. Discharges to Small Lake Basins. Projects discharging into Bitter Lake, Green Lake, or Haller Lake drainage basins shall comply with subsection 22.805.080.B.4 (Peak Control Standard) if the total new plus replaced impervious surface is 10,000 square feet or more.
 5. Discharges to Public Combined Sewer. Unless the Director of SPU has exercised its discretion to determine and has determined that the public combined sewer has sufficient capacity to carry existing and anticipated loads, roadway projects discharging into the public combined sewer shall comply with subsection 22.805.080.B.4 (Peak Control Standard) if the total new plus replaced impervious surface is 10,000 square feet or more.
 6. Discharges to a Capacity-constrained System. In addition to applicable minimum requirements for flow control in subsection 22.805.060.A.1 through subsection 22.805.060.A.5, roadway projects discharging into a capacity-constrained system shall also comply with subsection 22.805.080.B.4 (Peak Control Standard) if the total new plus replaced impervious surface is 10,000 square feet or more.
- B. Treatment. Roadway projects not discharging to the public combined sewer shall, to the extent allowed by law:

1. If the site has less than 35 percent existing impervious surface coverage, and the project's total new plus replaced pollution-generating impervious surface is 5,000 square feet or more, comply with the minimum requirements for treatment contained in Section 22.805.090 for flows from the total new plus replaced pollution-generating impervious surface; and
2. If the site has greater than or equal to 35 percent existing impervious surface coverage and the project's total new pollution-generating impervious surface is 5,000 square feet or more, and
 - a. If the new pollution-generating impervious surface adds 50 percent or more to the existing impervious surfaces within the project limits, comply with the minimum requirements for treatment contained in Section 22.805.090 for flows from the total new plus replaced pollution-generating impervious surface. The project limits are defined by the length of the project and the width of the right-of-way; or
 - b. If the new pollution-generating impervious surface adds less than 50 percent to the existing impervious surfaces within the project limits, comply with the minimum requirements for treatment contained in Section 22.805.090 for flows from the total new pollution-generating impervious surface. The project limits are defined by the length of the project and the width of the right-of-way; and
3. If the total new plus replaced pollution-generating pervious surfaces is three-quarters of an acre or more and from which there is a surface discharge in a natural or man-made conveyance system from the site, comply with the minimum requirements for treatment contained in Section 22.805.090 for flows from the total new plus replaced pollution-generating pervious surface.

(Ord. [124758](#), § 3, 2015; Ord. 123105, § 3, 2009.)

22.805.070 - Minimum Requirements for Joint Parcel-Based and Roadway Projects

The parcel-based portion of joint projects shall comply with the minimum requirements for parcel-based projects contained in Section 22.805.050. The roadway portion of joint projects shall comply with the minimum requirements roadway projects contained in Section 22.805.060. The boundary of the public right-of-way shall form the boundary between the parcel and roadway portions of the joint project for purposes of determining applicable thresholds.

(Ord. 123105, § 3, 2009.)

22.805.080 - Minimum Requirements for Flow Control

- A. Applicability. The requirements of this subsection apply to the extent required in Section 22.805.050 to Section 22.805.070.
- B. Requirements. Flow control facilities shall be installed to the extent allowed by law and maintained per rules promulgated by the Director to receive flows from that portion of the site being developed. Post-development discharge determination must include flows from dewatering activities. All projects shall use green stormwater infrastructure to the maximum extent feasible to meet the minimum requirements. Flow control facilities that receive flows from less than that portion of the site being developed may be installed if the total new plus replaced impervious surface is less than 10,000 square feet, the project site uses only green stormwater infrastructure to meet the requirement, and the green stormwater infrastructure provides substantially equivalent environmental protection as facilities not using green stormwater infrastructure that receive flows from all of the portion of the site being developed.
 1. Wetland Protection Standard. All projects discharging to wetlands or their buffers shall protect the hydrologic conditions, vegetative community, and substrate characteristics of the wetlands and their buffers to protect the functions and values of the affected wetlands. The introduction of sediment, heat and other pollutants and contaminants into wetlands shall be minimized through the selection, design, installation, and maintenance of temporary and permanent controls. Discharges shall maintain existing flows to the extent necessary to protect the functions and values of the wetlands. Prior to authorizing new discharges to a wetland, alternative discharge

locations shall be evaluated and infiltration options outside the wetland shall be maximized unless doing so will adversely impact the functions and values of the affected wetlands. If one or more of the flow control requirements contained in 22.805.080.B.2 through 22.805.080.B.4 also apply to the project, an analysis shall be conducted to ensure that the functions and values of the affected wetland are protected before implementing these flow control requirements.

2. Pre-developed Forested Standard. The post-development discharge peak flow rates and flow durations must be matched to the pre-developed forested condition for the range of pre-developed discharge rates from 50% of the 2-year recurrence interval flow up to the 50-year recurrence interval flow.
 3. Pre-developed Pasture Standard. The post-development discharge peak flow rates and flow durations must be matched to the pre-developed pasture condition for the range of pre-developed discharge rates from 50% of the 2-year recurrence interval flow up to the 2-year recurrence interval flow.
 4. Peak Flow Control Standard. The post-development peak flow with a 4% annual probability (25-year recurrence flow) shall not exceed 0.4 cubic feet per second per acre. Additionally, the peak flow with a 50% annual probability (2-year recurrence flow) shall not exceed 0.15 cubic feet per second per acre.
- C. Inspection and Maintenance Schedule. Temporary and permanent flow control facilities shall be inspected and maintained according to rules promulgated by the Director to keep these facilities in continuous working order.

(Ord. 123105, § 3, 2009.)

22.805.090 - Minimum Requirements for Treatment.

- A. Applicability. The requirements of this subsection apply to the extent required in Section 22.805.050 to Section 22.805.070.
- B. Requirements. Water quality treatment facilities shall be installed to the extent allowed by law and maintained per rules promulgated by the Director to treat flows from the pollution generating pervious and impervious surfaces on the site being developed. When stormwater flows from other areas, including non-pollution generating surfaces (e.g., roofs), dewatering activities, and offsite areas, cannot be separated or bypassed, treatment BMPs shall be designed for the entire area draining to the treatment facility. All projects shall use green stormwater infrastructure the maximum extent feasible to meet the minimum requirements.
 1. Runoff Volume. Stormwater treatment facilities shall be designed based on the stormwater runoff volume from the contributing area or a peak flow rate as follows:
 - a. The daily runoff volume at or below which 91 percent of the total runoff volume for the simulation period occurs, as determined using an approved continuous model. It is calculated as follows:
 - 1) Rank the daily runoff volumes from highest to lowest.
 - 2) Sum all the daily volumes and multiply by 0.09.
 - 3) Sequentially sum daily runoff volumes, starting with the highest value, until the total equals 9 percent of the total runoff volume. The last daily value added to the sum is defined as the water quality design volume.
 - b. Different design flow rates are required depending on whether a treatment facility will be located upstream or downstream of a detention facility:
 - 1) For facilities located upstream of detention or when detention is not required, the design flow rate is the flow rate at or below which 91 percent of the total runoff volume for the simulation period is treated, as determined using an approved continuous runoff model.

- 2) For facilities located downstream of detention, the design flow rate is the release rate from the detention facility that has a 50 percent annual probability of occurring in any given year (2-year recurrence interval), as determined using an approved continuous runoff model.
- c. Infiltration facilities designed for water quality treatment must infiltrate 91 percent of the total runoff volume as determined using an approved continuous runoff model. To prevent the onset of anaerobic conditions, an infiltration facility designed for water quality treatment purposes must be designed to drain the water quality design treatment volume (the 91st percentile, 24-hour volume) within 48 hours.
2. Basic Treatment. A basic treatment facility shall be required for all projects. The requirements of subsection 22.805.090 B3 (Oil Control Treatment), subsection 22.805.090 B4 (Phosphorus Treatment), subsection 22.805.090.B.5 (Enhanced Treatment) are in addition to this basic treatment requirement.
3. Oil Control Treatment. An oil control treatment facility shall be required for high-use sites, as defined in this subtitle.
4. Phosphorus Treatment. A phosphorus treatment facility shall be required for projects discharging into nutrient-critical receiving waters.
5. Enhanced Treatment. An enhanced treatment facility for reducing concentrations of dissolved metals shall be required for projects discharging to a fish-bearing stream or lake, and to waters or drainage systems that are tributary to fish-bearing streams, creeks, or lakes, if the project meets one of the following criteria:
 - a. For a parcel-based project, the total of new plus replaced pollution-generating impervious surface is 5,000 square feet or more, and the site is an industrial, commercial, or multi-family project.
 - b. For a roadway project, the project adds 5,000 square feet or more of pollution-generating impervious surface, and the site is either:
 - 1) A fully controlled or a partially controlled limited access highway with Annual Average Daily Traffic counts of 15,000 or more; or
 - 2) Any other road with an Annual Average Daily Traffic count of 7,500 or greater.
6. Discharges to Groundwater. Direct discharge of untreated drainage water from pollution-generating impervious surfaces to ground water is prohibited.
- C. Inspection and Maintenance Schedule. Temporary and permanent treatment facilities shall be inspected and maintained according to rules promulgated by the Director to keep these facilities to be kept in continuous working order.

(Ord. 123105, § 3, 2009.)

Chapter 22.807 - DRAINAGE CONTROL REVIEW AND APPLICATION REQUIREMENTS

22.807.010 - General

- A. No discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, may cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.
- B. Every permit issued to implement this subtitle shall contain a performance standard requiring that no discharge from a site, real property, or drainage facility, directly or indirectly to a public drainage system, private drainage system, or a receiving water within or contiguous to Seattle city limits, cause or contribute to a prohibited discharge or a known or likely violation of water quality standards in the receiving water or a known or likely violation of the City's municipal stormwater NPDES permit.

(Ord. 123105, § 3, 2009.)

22.807.020 - Drainage control review and application requirements

A. Thresholds for Drainage Control Review. Drainage control review and approval shall be required for any of the following:

1. Standard drainage control review and approval shall be required for the following:
 - a. Any land disturbing activity encompassing an area of seven hundred fifty (750) square feet or more;
 - b. Applications for either a master use permit or building permit that includes the cumulative addition of 750 square feet or more of land disturbing activity and/or new and replaced impervious surface;
 - c. Applications for which a grading permit or approval is required per SMC 22.170;
 - d. Applications for street use permits for the cumulative addition of 750 square feet or more of new and replaced impervious surface and land disturbing activity;
 - e. City public works projects or construction contracts, including contracts for day labor and other public works purchasing agreements, for the cumulative addition of 750 square feet or more of new and replaced impervious surface and/or land disturbing activity to the site, except for projects in a City-owned right-of-way and except for work performed for the operation and maintenance of park lands under the control or jurisdiction of the Department of Parks and Recreation; or
 - f. Permit approvals and contracts that include any new or replaced impervious surface or any land disturbing activity on a site deemed a potentially hazardous location, as specified in Section 22.800.050 (Potentially Hazardous Locations);
 - g. Permit approvals that include any new impervious surface in a Category I peat settlement-prone area delineated pursuant to subsection 25.09.020; or
 - h. Whenever an exception to a requirement set forth in this subtitle or in a rule promulgated under this subtitle is desired, whether or not review and approval would otherwise be required, including but not limited to, alteration of natural drainage patterns or the obstruction of watercourses.
2. Large project drainage control review and approval shall be required for projects that include:
 - a. Five thousand square feet or more of new plus replaced impervious surface;
 - b. One acre or more of land disturbing activity;
 - c. Conversion of $\frac{3}{4}$ acres or more of native vegetation to lawn or landscaped area;
 - d. Conversion of 2.5 acres or more of native vegetation to pasture.
3. The City may, by interagency agreement signed by the Directors of SPU and DPD, waive the drainage and erosion control permit and document requirements for property owned by public entities, when discharges for the property do not enter the public drainage system or the public combined sewer system.

B. Submittal Requirements for Drainage Control Review and Approval

1. Information Required for Standard Drainage Control Review. The following information shall be submitted to the Director for all projects for which drainage control review is required.
 - a. Standard Drainage Control Plan. A drainage control plan shall be submitted to the Director. Standard designs for drainage control facilities as set forth in rules promulgated by the Director may be used.
 - b. Construction Stormwater Control Plan. A construction stormwater control plan demonstrating controls sufficient to determine compliance with subsection 22.805.020.D

shall be submitted. The Director may approve a checklist in place of a plan, pursuant to rules promulgated by the Director.

- c. Memorandum of Drainage Control. The owner(s) of the site shall sign a "memorandum of drainage control" that has been prepared by the Director of SPU. Completion of the memorandum shall be a condition precedent to issuance of any permit or approval for which a drainage control plan is required. The applicant shall file the memorandum of drainage control with the King County Recorder's Office so as to become part of the King County real property records. The applicant shall give the Director of SPU proof of filing of the memorandum. The memorandum shall not be required when the drainage control facility will be owned and operated by the City. A memorandum of drainage control shall include:
 - 1) The legal description of the site;
 - 2) A summary of the terms of the drainage control plan, including any known limitations of the drainage control facilities, and an agreement by the owners to implement those terms;
 - 3) An agreement that the owner(s) shall inform future purchasers and other successors and assignees of the existence of the drainage control facilities and other elements of the drainage control plan, the limitations of the drainage control facilities, and of the requirements for continued inspection and maintenance of the drainage control facilities;
 - 4) The side sewer permit number and the date and name of the permit or approval for which the drainage control plan is required;
 - 5) Permission for the City to enter the property for inspection, monitoring, correction, and abatement purposes;
 - 6) An acknowledgment by the owner(s) that the City is not responsible for the adequacy or performance of the drainage control plan, and a waiver of any and all claims against the City for any harm, loss, or damage related to the plan, or to drainage or erosion on the property, except for claims arising from the City's sole negligence; and
 - 7) The owner(s)' signatures acknowledged by a notary public.
2. Information Required for Large Project Drainage Control Review. In addition to the submittal requirements for standard drainage control review, the following information is required for projects that include: one acre or more of land disturbing activities; 5,000 square feet or more of new and replaced impervious surface; conversion of $\frac{3}{4}$ acres or more of native vegetation to lawn or landscaped area; or conversion of 2.5 acres or more of native vegetation to pasture.
 - a. Comprehensive Drainage Control Plan. A comprehensive drainage control plan, in lieu of a standard drainage control plan, to comply with the requirements of this subtitle and rules promulgated hereunder and to accomplish the purposes of this subtitle shall be submitted with the permit application. It shall be prepared by a licensed civil engineer in accordance with standards adopted by the Director of DPD.
 - b. Inspection and Maintenance Schedule. A schedule shall be submitted that provides for inspection of temporary and permanent flow control facilities, treatment facilities, and source controls to comply with Section 22.805.080 (Minimum Requirements for Flow Control) and Section 22.805.090 (Minimum Requirements for Treatment).
 - c. Construction Stormwater Control Plan. A construction stormwater control plan prepared in accordance with subsection 22.805.020.D shall be submitted.
3. Applications for drainage control review and approval shall be prepared and submitted in accordance with provisions of this subsection, with Chapter 21.16 (Side Sewer Code) and with associated rules and regulations adopted jointly by the Directors of DPD and SPU.

4. The Director of DPD may require additional information necessary to adequately evaluate applications for compliance with the requirements and purposes of this subtitle and other laws and regulations, including but not limited to Chapter 25.09 (Regulations for Environmentally Critical Areas) and Chapter 23.60A. The Director of DPD may also require appropriate information about adjoining properties that may be related to, or affected by, the drainage control proposal in order to evaluate effects on the adjacent property. This additional information may be required as a precondition for permit application review and approval.
 5. Where an applicant simultaneously applies for more than one of the permits listed in subsection 22.807.020.A for the same property, the application shall comply with the requirements for the permit that is the most detailed and complete.
- C. Authority to Review. The Director may approve those plans that comply with the provisions of this subtitle and rules promulgated hereunder, and may place conditions upon the approval in order to assure compliance with the provisions of this subtitle. Submission of the required drainage control application information shall be a condition precedent to the processing of any of the above-listed permits. Approval of drainage control shall be a condition precedent to issuance of any of the above-listed permits. The Director may review and inspect activities subject to this subtitle and may require compliance regardless of whether review or approval is specifically required by this subsection. The Director may disapprove plans that do not comply with the provisions of this subtitle and rules promulgated hereunder. Disapproved plans shall be returned to the applicant, who may correct and resubmit the plans.

(Ord. [124105](#), § 8, 2013; Ord. 123105, § 3, 2009.)

22.807.090 - Maintenance and Inspection

- A. Responsibility for Maintenance and Inspection. The owner and other responsible party shall maintain drainage control facilities, source controls, and other facilities required by this subtitle and by rules adopted hereunder to keep these facilities in continuous working order. The owner and other responsible party shall inspect permanent drainage control facilities temporary drainage control facilities, and other temporary best management practices or facilities on a schedule consistent with this subtitle and sufficient for the facilities to function at design capacity. The Director may require the responsible party to conduct more frequent inspections and/or maintenance when necessary to ensure functioning at design capacity. The owner(s) shall inform future purchasers and other successors and assignees to the property of the existence of the drainage control facilities and the elements of the drainage control plan, the limitations of the drainage control facilities, and the requirements for continued inspection and maintenance of the drainage control facilities.
- B. Inspection by City. The Director of SPU may establish inspection programs to evaluate and, when required, enforce compliance with the requirements of this subtitle and accomplishment of its purposes. Inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the City's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other best management practices.
- C. Entry for Inspection and Abatement Purposes.
 1. New Installations and Connections. When any new drainage control facility is installed on private property, and when any new connection is made between private property and a public drainage system, sanitary sewer or combined sewer, the property owner shall grant, per subsection 22.807.020.B.1.c (Memorandum of Drainage Control), the City the right to enter the

property at reasonable times and in a reasonable manner pursuant to an inspection program established pursuant subsection 22.807.090.B, and to enter the property when the City has a reasonable basis to believe that a violation of this subtitle is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this subtitle.

2. Existing Real Property and Discharges. Owners of property with existing discharges or land uses subject to this subtitle who are not installing a new drainage control facility or making a new connection between private property and a public drainage system, sanitary sewer or combined sewer, shall have the option to execute a permission form for the purposes described above when provided with the form by the Director of SPU.

(Ord. 123105, § 3, 2009.)

Chapter 22.808 - STORMWATER CODE ENFORCEMENT

22.808.010 - Violations

A. Civil Violations.

1. The following are civil violations of this subtitle, subject to a maximum civil penalty of up to \$5,000 per day for each violation.
 - a. General. It is a violation to not comply with any requirement of, or to act in a manner prohibited by, this subtitle, or a permit, approval, rule, manual, order, or Notice of Violation issued pursuant to this subtitle;
 - b. Aiding and Abetting. It is a violation to aid, abet, counsel, encourage, commend, incite, induce, hire or otherwise procure another person to violate this subtitle;
 - c. Alteration of Existing Drainage. It is a violation to alter existing drainage patterns which serve a tributary area of more than one acre without authorization or approval by the Director;
 - d. Obstruction of Watercourse. It is a violation to obstruct a watercourse without authorization or approval by the Director;
 - e. Dangerous Condition. It is a violation to allow to exist, or cause or contribute to, a condition of a drainage control facility, or condition related to grading, drainage water, drainage or erosion that is likely to endanger the public health, safety or welfare, the environment, or public or private property;
 - f. Interference. It is a violation for any person to interfere with or impede the correction of any violation, or compliance with any Notice of Violation, emergency order, stop work order, or the abatement of any nuisance;
 - g. Piecemeal of Projects. It is a violation for any person to knowingly divide a large project into a set of smaller projects specifically for the purpose of avoiding minimum requirements;
 - h. Altering a Posted Order. It is a violation for any person to remove, obscure, or mutilate any posted order of the Director, including a stop work or emergency order; and
 - i. Continuing Work. It is a violation for any work to be done after service or posting of a stop work order, except work necessary to perform the required corrective action, until authorization is given by the Director.

B. Criminal Violations.

1. The following are criminal violations, punishable upon conviction by a fine of not more than \$5,000 per violation or imprisonment for each violation for not more than 360 days, or both such fine and imprisonment:

- a. Failing to comply with a Notice of Violation or Director's order issued pursuant to this subtitle;
- b. Failing to comply with a court order;
- c. Tampering with or vandalizing any part of a drainage control facility or other best management practice, a public or private drainage system, monitoring or sampling equipment or records, or notices posted pursuant to this subtitle; and
- d. Anyone violating this subtitle who has had a judgment, final Director's order, or Director's review decision against them for a prior violation of this subtitle in the preceding five years.

(Ord. 123105, § 4, 2009.)

22.808.020 - Liability and Defenses of Responsible Parties

- A. Who Must Comply. It is the specific intent of this subtitle to place the obligation of complying with its requirements upon the responsible parties, as defined in subsection 22.801.190. The City and its agencies are intended to have the same obligation for compliance when the City is a responsible party. No provision of this subtitle is intended to impose any other duty upon the City or any of its officers or employees.
 1. Joint and Several Liability. Each responsible party is jointly and severally liable for a violation of this subtitle. The Director may take enforcement action, in whole or in part, against any responsible party. All applicable civil penalties may be imposed against each responsible party.
 2. Allocation of Damages. In the event enforcement action is taken against more than one responsible party, recoverable damages, costs, and expenses may be allocated among the responsible parties by the court based upon the extent to which each responsible party's acts or omissions caused the violation. If this factor cannot be determined the court may consider:
 - a. Awareness of the violation;
 - b. Ability to correct the violation;
 - c. Ability to pay the damages, costs, and expenses;
 - d. Cooperation with government agencies;
 - e. Degree to which any impact or threatened impact on water or sediment quality, human health, the environment, or public or private property is related to acts or omissions by each responsible party;
 - f. Degree to which the responsible parties made good-faith efforts to avoid a violation or to mitigate its consequences; and
 - g. Other equitable factors.
- B. Defenses. A responsible party shall not be liable under this subtitle when the responsible party proves, by a preponderance of the evidence, one of the following:
 1. The violation was caused solely by an act of God;
 2. The violation was caused solely by another responsible party over whom the defending responsible party had no authority or control and the defending responsible party could not have reasonably prevented the violation;
 3. The violation was caused solely by a prior owner or occupant when the defending responsible party took possession of the property without knowledge of the violation, after using reasonable efforts to identify violations. But, the defending responsible party shall be liable for all continuing, recurrent, or new violations after becoming the owner or occupant; or
 4. The responsible party implemented and maintained all appropriate drainage control facilities, treatment facilities, flow control facilities, erosion and sediment controls, source controls, and best management practices identified in rules promulgated by the Director or in manuals

published by the State Department of Ecology, or as otherwise identified and required of the responsible party by the Director in writing.

(Ord. 123105, § 4, 2009.)

22.808.025 - Right of Entry for Enforcement

With the consent of the owner or occupant of a building, premises, or property, or pursuant to a lawfully issued warrant, the Director may enter a building, premises, or property at any reasonable time to perform the duties imposed by this code.

(Ord. 123105, § 4, 2009.)

22.808.030 - Enforcement Actions

A. Investigation. The Director may investigate any site where there is reason to believe that there may be a failure to comply with the requirements of this subtitle.

B. Notice of Violation.

1. Issuance. The Director is authorized to issue a Notice of Violation to a responsible party, whenever the Director determines that a violation of this subtitle has occurred or is occurring. The Notice of Violation shall be considered an order of the Director.
2. Contents.
 - a. The Notice of Violation shall include the following information:
 - 1) A description of the violation and the action necessary to correct it;
 - 2) The date of the notice; and
 - 3) A deadline by which the action necessary to correct the violation must be completed.
 - b. A Notice of Violation may be amended at any time to correct clerical errors, add citations of authority, or modify required corrective action.
3. Service. The Director shall serve the notice upon a responsible party either by personal service, by first class mail, or by certified mail return receipt requested, to the party's last known address. If the address of the responsible party cannot be found after a reasonable search, the notice may be served by posting a copy of the notice at a conspicuous place on the property. Alternatively, if the whereabouts of the responsible party is unknown and cannot be ascertained in the exercise of reasonable diligence, and the Director makes an affidavit to that effect, then service may be accomplished by publishing the notice once each week for two consecutive weeks in the City official newspaper.
4. Nothing in this subtitle shall be deemed to obligate or require the Director to issue a Notice of Violation or order prior to the initiation of enforcement action by the City Attorney's Office pursuant to subsection 22.808.030.E.

C. Stop Work and Emergency Orders.

1. Stop Work Order. The Director may order work on a site stopped when he or she determines it is necessary to do so in order to obtain compliance with or to correct a violation of any provision of this subtitle or rules promulgated hereunder or to correct a violation of a permit or approval granted under this subtitle.
 - a. The stop work notice shall contain the following information:
 - 1) A description of the violation; and
 - 2) An order that the work be stopped until corrective action has been completed and approved by the Director.

- b. The stop work order shall be personally served on the responsible party or posted conspicuously on the premises.
 2. Emergency Order.
 - a. The Director may order a responsible party to take emergency corrective action and set a schedule for compliance and/or may require immediate compliance with an emergency order to correct when the Director determines that it is necessary to do so in order to obtain immediate compliance with or to correct a violation of any provision of this subtitle, or to correct a violation of a permit or approval granted under this subtitle.
 - b. An emergency order shall be personally served on the responsible party or posted conspicuously on the premises.
 - c. The Director is authorized to enter any property to investigate and correct a condition associated with grading, drainage, erosion control, drainage water, or a drainage control facility when it reasonably appears that the condition creates a substantial and present or imminent danger to the public health, safety or welfare, the environment, or public or private property. The Director may enter property without permission or an administrative warrant in the case of an extreme emergency placing human life, property, or the environment in immediate and substantial jeopardy which requires corrective action before either permission or an administrative warrant can be obtained. The cost of such emergency corrective action shall be collected as set forth in subsection 22.808.060.
 3. Director's Review of Stop Work and Emergency Order. A stop work order or emergency order shall be final and not subject to a Director's review.
 - D. Review by Director.
 1. A Notice of Violation, Director's order, or invoice issued pursuant to this subtitle shall be final and not subject to further appeal unless an aggrieved party requests in writing a review by the Director within ten days after service of the Notice of Violation, order or invoice. When the last day of the period so computed is a Saturday, Sunday or federal or City holiday, the period shall run until 5:00 p.m. on the next business day.
 2. Following receipt of a request for review, the Director shall notify the requesting party, any persons served the Notice of Violation, order or invoice, and any person who has requested notice of the review, that the request for review has been received by the Director. Additional information for consideration as part of the review shall be submitted to the Director no later than 15 days after the written request for a review is mailed.
 3. The Director will review the basis for issuance of the Notice of Violation, order, or invoice and all information received by the deadline for submission of additional information for consideration as part of the review. The Director may request clarification of information received and a site visit. After the review is completed, the Director may:
 - a. Sustain the Notice of Violation, order, or invoice;
 - b. Withdraw the Notice of Violation, order or invoice;
 - c. Continue the review to a date certain for receipt of additional information; or
 - d. Modify or amend the Notice of Violation, order, or invoice.
 4. The Director's decision shall become final and is not subject to further administrative appeal.
 - E. Referral to City Attorney for Enforcement. If a responsible party fails to correct a violation or pay a penalty as required by a Notice of Violation, or fails to comply with a Director's order, the Director shall refer the matter to the City Attorney's Office for civil or criminal enforcement action. Civil actions to enforce a violation of this subtitle shall be exclusively in Municipal Court.
 - F. Appeal to Superior Court. Because civil actions to enforce Title 22 are brought exclusively in Municipal Court, notices of violation, orders, and all other actions made under this chapter are not subject to judicial review under chapter 36.70C RCW. Instead, final decisions of the Municipal Court

on enforcement actions authorized by this chapter may be appealed under the Rules of Appeals of Decisions of Courts of Limited Jurisdiction.

- G. Filing of Notice or Order. A Notice of Violation, voluntary compliance agreement or an order issued by the Director or court, may be filed with the King County Recorder's Office.
- H. Change of Ownership. When a Notice of Violation, voluntary compliance agreement, or an order issued by the Director or court has been filed with the King County Recorder's Office, a Notice of Violation or an order regarding the same violations need not be served upon a new owner of the property where the violation occurred. If no Notice of Violation or order is served upon the new owner, the Director may grant the new owner the same number of days to comply as was given the previous owner. The compliance period for the new owner shall begin on the date that the conveyance of title to the new owner is completed.

(Ord. 123105, § 4, 2009.)

22.808.040 - Voluntary Compliance Agreement

- A. Initiation. Either a responsible party or the Director may initiate negotiations for a voluntary compliance agreement at any time. Neither has any obligation to enter into any voluntary compliance agreement.
- B. Contents. A voluntary compliance agreement shall identify actions to be taken by the responsible party that will correct past or existing violations of this subtitle. The agreement may also identify actions to mitigate the impacts of violations. The agreement shall contain a schedule for completion of the corrective actions and any mitigating actions. The agreement shall contain a provision allowing the Director to inspect the premises to determine compliance with the agreement. The agreement shall provide that the responsible party agrees the City may perform the actions set forth in the agreement if the responsible party fails to do so according to the terms and schedule of the agreement, and the responsible party will pay the costs, expenses and damages the City incurs in performing the actions, as set forth in Section 22.808.060.
- C. Effect of Agreement.
 - 1. A voluntary compliance agreement is a binding contract between the party executing it and the City. It is not enforceable by any other party. By entering into a voluntary compliance agreement, a responsible party waives the right to Director's Review of the Notice of Violation or order.
 - 2. Penalties may be reduced or waived if violations are corrected or mitigated according to the terms and schedule of a voluntary compliance agreement. If the responsible party fails to perform according to the terms and schedule of the voluntary compliance agreement, penalties for each violation addressed in the agreement may be assessed starting from the date the violation occurred, or as otherwise provided for in a Notice of Violation or Director's order.
- D. Modification. The terms and schedule of the voluntary compliance agreement may be modified by mutual agreement of the responsible party and either Director if circumstances or conditions outside the responsible party's control, or unknown at the time the agreement was made, or other just cause necessitate such modifications.

(Ord. 123105, § 4, 2009.)

22.808.050 - Penalties and Damages

- A. Assessment of Penalties by the Director. The Director, after considering all available information, may assess a penalty for each violation of this subtitle based upon the Schedule of Civil Penalties.
- B. Schedule of Civil Penalties. The Director shall determine penalties as follows:
 - 1. Basic Penalty.

- a. **Maximum Penalty.** A violation of this subtitle is subject to a maximum civil penalty of up to \$5,000. Each day or portion thereof during which a violation of this subtitle exists is a separate violation of this subtitle.
- b. **Commencement Date.** The penalty shall commence on the date of the violation, unless otherwise provided for in a Notice of Violation or Director's order.
- c. **Assessment Matrix.** The penalty shall be assessed using a matrix of criteria and scored as defined in rules promulgated by the Director. The total score will equate with a penalty up to a maximum of \$5000 for each violation. The penalty shall be rated for severity by using the criteria listed below and by answering "No", "Possibly", "Probably", or "Definitely":
 - 1) Does the violation pose a public health risk;
 - 2) Does the violation cause environmental damage or adversely impact infrastructure;
 - 3) Was the responsible party willful or knowing of the violation;
 - 4) Was the responsible party unresponsive in correcting the violation;
 - 5) Was there improper operation or maintenance;
 - 6) Was there a failure to obtain necessary permits or approval;
 - 7) Does the violation provide economic benefit for non-compliance; and
 - 8) Was the violation a repeat violation.
- C. **Penalty for Significant Violation.** For violations causing significant harm to public health, safety, welfare, the environment, or private or public property, the Director may, as an alternative to the Basic Penalty, refer the matter to the City Attorney's Office for enforcement and request the City Attorney seek a penalty equivalent to the economic benefit the responsible party derived from the violation. Significant harm is damage or injury which cannot be fully corrected or mitigated by the responsible party, and which cannot be adequately compensated for by assessment of the Basic Penalty and costs, expenses, or damages under this subtitle. Economic benefit may be determined by savings in costs realized by the responsible party, value received by the responsible party, increased income to the responsible party, increase in market value of property, or any other method reasonable under the circumstances.
- D. **Damages.** Whoever violates any of the provisions of this subtitle shall, in addition to any penalties provided for such violation, be liable for any: investigation cost, cost to correct or any other cost expense; loss or damage incurred by the City; plus a charge of 15% for administrative costs. This subtitle does not establish a cause of action that may be asserted by any party other than the City. Penalties, damages, costs and expenses may be recovered only by the City.
- E. **Effect of Payment of Penalties.** The responsible party named in a Notice of Violation or order is not relieved of the duty to correct the violation by paying civil penalties.

(Ord. 123105, § 4, 2009.)

22.808.060 - Collection of Costs and Penalties

- A. **Invoice and Demand for Payment of Investigation and Correction Costs.** The Director may issue an invoice and demand for payment of the City's costs and expenses when the Director has investigated or corrected a violation of this subtitle. The invoice shall include:
 1. The amount of the City's investigation and correction costs, which include, but are not limited to:
 - a. Billed cost including labor, administration, overhead, overtime, profit, taxes, and other related costs for a hired contractor to investigate and/or perform the abatement work;
 - b. Labor, administration, overhead, overtime, and other related costs for the City staff and crews to investigate and/or perform the abatement work;
 - c. Administrative costs to set up contracts and coordinate work;

- d. Time spent communicating with the responsible party, any other enforcing agencies, and the affected community;
 - e. Inspections for compliance with the Code, documentation of costs, and invoicing the responsible party;
 - f. Cost of equipment, materials, and supplies, including all related expenses for purchasing, renting, and leasing;
 - g. Laboratory costs and analytical expenses;
 - h. Cost of mobilization, disposal of materials, and cleanup, and
 - i. Any associated permit fees;
2. Either a legal description of the property corresponding as nearly as possible to that used for the property on the rolls of the King County Assessor or, where available, the property's street address;
 3. Notice that the responsible party may request a Director's review pursuant to subsection 22.808.030.D;
 4. Notice that if the amount due is not paid within 30 days, the unpaid amount may be collected in any of the manners identified in subsection 22.808.060.C; and
 5. Notice that interest shall accrue on the unpaid balance if not paid within 30 days after the invoice date.
- B. Invoice and Demand for Payment of Civil Penalties. The Director may issue an invoice and demand for payment of civil penalties when the responsible party has failed to pay a penalty by the deadline in a Notice of Violation or order and has failed to request a Director's review or file an appeal within the required time periods established in subsection 22.808.030.D. The invoice shall include:
1. The amount of the penalty;
 2. Either a legal description of the property corresponding as nearly as possible to that used for the property on the rolls of the King County Assessor or, where available, the property's street address;
 3. Notice that if the amount due is not paid within 30 days, the unpaid amount may be collected in any of the manners identified in subsection 22.808.060.C and
 4. Notice that interest shall accrue on the unpaid balance if not paid within 30 days after the invoice date.
- C. Collection Following a Judicial Review. If a court has issued an order or judgment imposing penalties, costs, damages, or expenses for a violation of this subtitle, and the court's order or judgment is not appealed within 30 days, the Director may:
1. Refer the matter to the City Attorney to initiate appropriate enforcement action;
 2. Refer, after consultation with the City Attorney, the matter to a collection agency; or
 3. Add a surcharge in the amount owed under the order to the bill for drainage and wastewater services to the site. If unpaid, the surcharge may become a lien on the property, may be foreclosed, and may accrue interest as provided by state law or Section 21.33.110.

(Ord. 123105, § 4, 2009.)

22.808.070 - Public Nuisance

- A. Abatement Required. A public nuisance affecting drainage water, drainage, erosion control, grading and other public nuisances set forth in this subsection are violations of this subtitle. A responsible party shall immediately abate a public nuisance upon becoming aware of its existence.

- B. **Dysfunctional Facility or Practice.** Any private drainage control facility or best management practice not installed or maintained as required by this subtitle, or otherwise found to be in a state of dysfunction creating, a threat to the public health, safety or welfare, the environment, or public or private property is a public nuisance.
- C. **Obstruction of Watercourse.** Obstruction of a watercourse without authorization by the Director, and obstruction in such a manner as to increase the risk of flooding or erosion should a storm occur, is a public nuisance.
- D. **Dangerous Conditions.** Any condition relating to grading, drainage water, drainage or erosion which creates a present or imminent danger, or which is likely to create a danger in the event of a storm, to the public health, safety or welfare, the environment, or public or private property is a public nuisance.
- E. **Abatement by the City.** The Director is authorized, but not required to investigate a condition that the Director suspects of being a public nuisance under this subtitle, and to abate any public nuisance. If a public nuisance is an immediate threat to the public health, safety or welfare or to the environment, the Director may summarily and without prior notice abate the condition. The Director shall give notice of the abatement to the responsible party as soon as reasonably possible after the abatement.
- F. **Collection of Abatement Costs.** The costs of abatement may be collected from the responsible party, including, a reasonable charge for attorney time, and a 15% surcharge for administrative expenses as set forth in subsection 22.808.050.D. Abatement costs and other damages, expenses and penalties collected by the City shall go into an abatement account for the department collecting the moneys. The money in the abatement account shall be used for abatements, investigations, and corrections of violations performed by the City. When the account is insufficient the Director may use other available funds.

(Ord. 123105, § 4, 2009.)

22.808.080 - Additional Relief

In addition to any remedy provided in this subtitle, the Director may seek any other legal or equitable remedy to enjoin any acts or practice or abate any condition that or will constitute a violation of this subtitle or a public nuisance.

(Ord. 123105, § 4, 2009.)

22.808.090 - Suspension or Revocation

Approvals or permits granted on the basis of inaccurate or misleading information may be suspended or revoked. Other permits or approvals interrelated with an approval suspended or revoked under this subsection, including certificates of occupancy or approvals for occupancy, may also be suspended or revoked. When an approval or permit is suspended or revoked, the Director may require the applicant take corrective action to bring the project into compliance with this subtitle by a deadline set by the Director, or may take other enforcement action.

(Ord. 123105, § 4, 2009.)

22.808.100 - Fees

Fees for grading permits, drainage control plan review and approvals shall be as identified in the Fee Subtitle, Subtitle IX of Title 22, Seattle Municipal Code. Fees for record-keeping or other activities pursuant to this subtitle shall, unless otherwise provided for in this subtitle, be prescribed by ordinance.

(Ord. 123105, § 4, 2009.)

22.808.110 - Financial Assurance and Covenants

As a condition precedent to issuance of any permit or approval provided for in this subtitle, the Director may require an applicant for a permit or approval to submit financial assurances as provided in this subsection.

A. Insurance.

1. The Director may require the property owners or contractor carry liability and property damage insurance naming the City as an additional insured. The amount, as determined by the Director, shall be commensurate with the risks.
2. The Director may also require the property owner maintain a policy of general public liability insurance against personal injury, death, property damage and/or loss from activities conducted pursuant to the permit or approval, or conditions caused by such activities, and naming the City as an additional insured. The amount, as determined by the Director, shall be commensurate with the risks. It shall cover a period of not more than ten years from the date of issuance of a certificate of occupancy or finalization of the permit or approval. A certificate evidencing such insurance shall be filed with the Director before issuing a certificate of occupancy or finalizing a permit for any single family dwelling or duplex.
3. The insurance policy shall provide that the City will be notified of cancellation of the policy at least 30 days prior to cancellation. The notice shall be sent to the Director who required the insurance and shall state the insured's name and the property address. If a property owner's insurance is canceled and not replaced, the permit or approval and any interrelated permit or approval may be revoked, including a certificate of occupancy or approval for occupancy.

B. Bonds, Cash Deposits or Instruments of Credit.

1. Surety Bond.

- a. The Director may require that the property owners or contractor deliver to the Director for filing in the Office of the City Clerk a surety bond, cash deposit or an instrument of credit in such form and amounts deemed by the Director to be necessary to ensure that requirements of the permit or approval are met. A surety bond may be furnished only by a surety company licensed to do business in The State of Washington. The bond shall be conditioned that the work will be completed in accordance with the conditions of the permit or approval, or, if the work is not completed, that the site will be left in a safe condition. The bond shall also be conditioned that the site and nearby, adjacent or surrounding areas will be restored if damaged or made unsafe by activities conducted pursuant to the permit or approval.
- b. The bond will be exonerated one year after a determination by the Director that the requirements of the permit or approval have been met. For work under a building permit, issuance of a certificate of occupancy or approval for occupancy following a final inspection shall be considered to be such a determination.

2. Assurance in Lieu of Surety Bond. In lieu of a surety bond, the owners may elect to file a cash deposit or instrument of credit with the Director in an amount equal to that which would be required in the surety bond and in a form approved by the Director. The cash deposit or instrument of credit shall comply with the same conditions as required for surety bonds.

C. Covenants.

1. The Director may require a covenant between the property owners and the City. The covenant shall be signed by the owners of the site and notarized prior to issuing any permit or approval in a potential landslide area, potentially hazardous location, flood prone zone, or other area of potentially hazardous soils or drainage or erosion conditions. The covenant shall not be required where the permit or approval is for work done by the City. The covenant shall include:

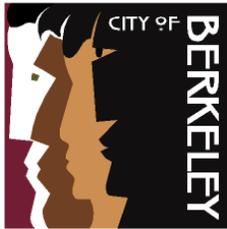
- a. A legal description of the property;
 - b. A description of the property condition making this subsection applicable;
 - c. A statement that the owners of the property understands and accepts the responsibility for the risks associated with development on the property given the described condition, and agrees to inform future purchasers and other successors and assignees of the risks;
 - d. The application date, type, and number of the permit or approval for which the covenant is required; and
 - e. A statement waiving the right of the owners, the owners' heirs, successors and assigns, to assert any claim against the City by reason of or arising out of issuance of the permit or approval by the City for the development on the property, except only for such losses that may directly result from the sole negligence of the City.
2. The covenant shall be filed by the Director with the King County Recorder's Office, at the expense of the owners, so as to become part of the King County real property records.

(Ord. 123105, § 4, 2009.)

22.808.140 - Severability

The provisions of this subtitle are declared to be separate and severable and the invalidity of any clause, sentence, paragraph, subdivision, section or portion of this subtitle, or the invalidity of the application thereof to any person or circumstance shall not affect the validity of the remainder of this subtitle or the validity of its application to other persons or circumstances.

(Ord. 116425 § 2(part), 1992.)



ACTION CALENDAR

January 22, 2019

(Continued from December 11, 2018)

To: Honorable Mayor and Members of the City Council
From: Community Environmental Advisory Commission (CEAC)
Submitted by: Michael Goldhaber, Chair, CEAC
Subject: Referral Response: Mandatory and Recommended Green Stormwater Infrastructure in New and Existing Redevelopments or Properties

RECOMMENDATION

Since the drought-storm-flooding cycle is predicted to get worse, refer to the City Manager to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period. The City Manager and staff should consider the following:

- Comply beyond the State and Alameda County current requirements;
- Encourage the treating and detaining of runoff up to approximately the 85th percentile of water deposited in a 24-hour period;
- Establish site design measures that include minimizing impervious surfaces;
- Require homeowners to include flooding offsets in preparing properties for sale;
- Offer option(s) for property owners to fund in-lieu centralized off-site storm-water retention facilities that would hold an equivalent volume of runoff;
- Require abatements for newly paved areas over a specific size;
- Make exceptions for properties that offer significantly below-market rent or sale prices;
- Authorize a fee for all new construction or for title transfer to cover the cost of required compliance inspections.
- Incorporate these measures for private property with similar measures for Public Works, while coordinating with EBMUD, BUSD, UCB and LBNL.

SUMMARY

Current climate-change predictions for California suggest severe droughts combined with extreme storms, causing dangerous erosion, flooding, and increased Bay pollution. According to Berkeley's watershed management plan, in a 10-year storm or greater, both the Codornices and Potter Creek watersheds have a propensity to flood, and climate change increases the probability and severity of storms. BART and the city currently run pumps to mitigate the flow underground.

In order to prevent flooding, there is an urgent need for the City to offset impermeable surfaces and detain stormwater. Impermeable surfaces generate faster stormwater flows of more intensity (volume per duration), therefore creating greater flooding threats. In addition, stormwater flows carries trash, pathogens, pesticides, fertilizer, metals, motor vehicle related contaminants to the creeks and the Bay. Stormwater detention can help mitigate this pollution.

On June 14, 2018, the Commission voted to adopt the Mandatory and Recommended Green Storm Water Infrastructure in New and Existing Redevelopments and send them to council. [Motioned/Seconded: Hetzel/Kapla. Carried: Unanimously (Liz Varnhagen, Fred Hetzel, Robb Kapla, Michael Goldhaber (chair), Ben Gould, and Kristina Lim). Absent: Carla Ticconi, Holly Williams]

FISCAL IMPACTS OF RECOMMENDATION

If inspection fees are adequate, there should be no net costs to the City, except for staff time to firm up the plan. With widespread implementation of features that promote stormwater detention, treatment, and infiltration, overall flood damage within the City should decrease, which in turn could result in increased property values and higher tax revenues.

CURRENT SITUATION AND ITS EFFECTS

This report responds to Referral #2016-21, which originally appeared on the agenda of the September 15, 2015 Council meeting and was sponsored by then-Councilmember Arreguin.

The State stormwater discharge permit requires the City of Berkeley to use Low Impact Design (LID) and Green Infrastructure (GI) to comply with stormwater management requirements, which is in keeping with Berkeley's goals for promoting sustainable development.

Currently, the City does seem to be enforcing rules requiring mitigation when 2,500 square feet or more of new impermeable surface is added to a property. Required mitigation typically takes up an area of approximately 4% of the total new impermeable area and is therefore a very fair and feasible requirement. However, smaller areas, especially pavement, ought to require similar mitigation as they increase runoff.

At present, permits are not required for adding new pavement unless these impinge on the street-property boundary. As a result, the City and its inspectors are not aware of most small projects that add new pavement. Requiring permits for all (most) (re)paving over permeable surfaces will help ensure that the City is aware, can ask for appropriate mitigation, or can recommend permeable paving that will reduce runoff. Requiring permits for paving beyond a very small threshold area is an essential part of preventing the cumulative effects of increased stormwater runoff.

All these requirements can be met by using on- or off-site strategies to manage the quantity and quality of stormwater runoff. The approach integrates stormwater into the urban environment to achieve multiple goals. It reduces stormwater pollution and restores natural hydrologic function to the City's watersheds. It can also provide wildlife habitat and contribute to the gradual creation of a greener city.

A crucial aspect of identifying and implementing effective mitigation, also mandated by law, is within a comprehensive Watershed Management Plan, which we understand the City is committed to complete. This should include both water from private properties, the topic of this CEAC message, and the City's contributions from public properties including streets and parks.

BACKGROUND

A recent UCLA study ["Increasing precipitation volatility in twenty-first-century California", Daniel L. Swain, Baird Langenbrunner, J. David Neelin & Alex Hall, *Nature Climate Change* 8, 427–433 (2018)] ... "found that over the next 40 years, the state will be 300 to 400 percent more likely to have a prolonged storm sequence as severe as the one that caused a now-legendary California flood more than 150 years ago.

"The Great Flood of 1862 filled valleys with feet of water and washed gold rush miners and their equipment out of the mountains. In the Central Valley, floodwaters stretched up to 300 miles long and as wide as 60 miles across." [*UCLA Newsroom*]

When there are heavy storms in Berkeley such as 10-year or greater, stormwater that is not absorbed runs downhill towards the Bay and collects in low elevation areas. As the movement of stormwater slows, it can result in flooding if drainage channels become overwhelmed, unless there are means of capturing the water for irrigation or other beneficial uses. It can also pick up pollutants that then will be carried into streams and eventually the Bay.

Urban development has caused two important changes in the nature and volume of stormwater. First, natural, vegetated permeable ground cover is converted to impermeable surfaces such as paved highways, streets, rooftops, and parking lots. Vegetated soil can both absorb rainwater and remove pollutants, providing a very effective natural purification process. This benefit is lost when pavement, or buildings are constructed. With the construction of more impermeable surface, stormwater runoff increases in intensity with higher flows of shorter duration, increasing the chance of overwhelming drainage channels and flooding in flood prone areas.

In addition, urban development creates pollution sources as urban population density increases. The contamination of urban stormwater comes from many and various sources including pathogens from both pet and human waste, solid waste from litter and trash, pesticides from both residential and commercial uses, fertilizers from

landscaping, and heavy metals and other contaminants from the operation of motor vehicles. All these pollutants and others can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles, thus yielding stormwater - runoff pollution that is unrelated to the activity associated with a given project site.

As a result of these two changes, stormwater discharges into the Bay from the developed urban area is significantly greater in volume, velocity and contaminants than the same area experienced prior to its conversion into an urban environment.

Additionally, increased flows and volumes of stormwater discharged from new impermeable surfaces resulting from new development and redevelopment can physically modify the natural aquatic ecosystems in our creeks, through bank erosion and deepening and widening of channels, elevating turbidity and sediment loads to the Bay.

Pollutants of concern in stormwater include heavy metals, excessive sediment production from erosion, petroleum hydrocarbons from sources such as motor vehicles, microbial pathogens of domestic sewage origin from illicit or accidental discharges, pesticides and herbicides, nutrients (from fertilizers), and trash.

Effective mitigation to offset the unpredictable and sometimes intense behavior of urban stormwater becomes increasingly necessary. Other cities, including San Francisco, Emeryville, and the North Bay Counties (Marin, Sonoma, Napa and Solano), as well as the Alameda County clean water program, of which the City of Berkeley is a member, have put together comprehensive requirements that are available as guides. Berkeley, given our pioneering status in green issues, should wish to be even more forward looking and develop our own comprehensive green infrastructure program. In addition, Berkeley should continue to work on a comprehensive water management plan, seeking input and cooperation from EBMUD, surrounding cities, UCB, LBNL and BUSD.

Berkeley's program should include requirements for construction projects to implement appropriate source control, site design, and stormwater treatment measures to address water quality, and to prevent increased intensity stormwater runoff volumes.

ENVIRONMENTAL SUSTAINABILITY

The proposed recommendation will improve the sustainability of new construction and redevelopment, increase the City's resiliency to climate change, 10-year storms, and flooding, while helping mitigate pollution from stormwater runoff.

RATIONALE FOR RECOMMENDATION

Berkeley's drought-storm cycle is likely to get worse as Climate change has more effecting the coming years and decades. Therefore, more efforts to control flooding and prevent pollution are needed. In addition, unless mitigated, increased paving on private property increases the stormwater runoff and related problems.

ALTERNATIVE ACTIONS CONSIDERED

CEAC considered City Council Referral #2016-21 from September 15, 2015 to develop an ordinance requiring large residential developments of 100 units or more or commercial developments that result in 5,000 square feet of new or replaced impervious surface, to incorporate Green Stormwater Infrastructure (GSI) and water conservation features into new projects.

CITY MANAGER

See companion report.

CONTACT PERSON

Viviana Garcia, Secretary, Toxics, (510) 981 7460



Office of the City Manager

2bACTION CALENDAR

January 22, 2019

(Continued from December 11, 2018)

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Timothy Burroughs, Director, Planning and Development Department
Phil Harrington, Director, Public Works Department

Subject: Companion Report to Referral Response: Mandatory and Recommended
Green Stormwater Infrastructure in New and Existing Redevelopments or
Properties

RECOMMENDATION

Express appreciation for the intent of the Community Environmental Advisory Commission (CEAC) recommendation to develop and implement measures to help reduce runoff from private property when rain exceeds two inches in a 24-hour period, and allow staff to continue existing efforts to implement Municipal Regional Stormwater Permit regulations in coordination with the 14 other local governments and agencies that participate in the Alameda Countywide Clean Water Program.

FISCAL IMPACTS OF RECOMMENDATION

There are no fiscal impacts from adopting the recommendation in the City Manager's companion report. Implementation of the CEAC recommendation could entail significant costs in staff time for analysis and enforcement, and to homeowners and developers of projects which would incur significant additional costs in project design and City fees.

CURRENT SITUATION AND ITS EFFECTS

In response to a referral from 2015, CEAC has recommended that the City Manager develop and adopt requirements for stormwater runoff abatement and retention which would go significantly beyond current requirements, and would include projects of much smaller scope than are covered by existing requirements.

Projects in Berkeley and throughout Alameda County are currently governed by Municipal Regional Stormwater NPDES¹ Permit (MRP 2.0) regulations. While the City of Berkeley is an individual permittee and is responsible for its own compliance with MRP 2.0, the City has joined with 13 other Alameda County cities, the county itself, the Alameda County Flood Control and Water Conservation District, and Zone 7 Water Agency to form the Alameda Countywide Clean Water Program (the ACCWP). City of Berkeley staff from the Public Works Department, the Toxic Management Division of the

¹ National Pollutant Discharge Elimination System

Planning Department, and the Environmental Health Division of the Health, Housing, and Community Services Department attend meetings on at least a monthly basis for the various subcommittees of the ACCWP. Many MRP 2.0 compliance documents, tools, and methodologies are worked on collaboratively through the ACCWP. Implementation of the CEAC recommendation would require the City to duplicate many efforts of the ACCWP, increasing the City's costs and diminishing the value of the City's membership in the ACCWP.

Current MRP regulations cover new developments, maintenance of commercial and industrial facilities, construction-related practices, municipal requirements for stormwater treatment and trash control, enforcement practices, and reporting requirements. Current regulations generally require development projects that create or replace 10,000 square feet or more of impervious surface to incorporate stormwater treatment measures, such as flow-through planters, bioswales, or permeable pavement. For projects between 2,500 and 10,000 square feet, applicants are required to install at least one of six site design measures, such as directing roof runoff to rain barrels or vegetated areas; directing runoff from sidewalks, walkways, parking lots to vegetated areas; constructing sidewalks, walkways and parking lots with permeable surfaces, etc. These requirements follow section C.3 of MRP 2.0. Compliance is monitored and verified by the Public Works Department, conditions are written into Land Use Planning approvals, and are reviewed by Building and Safety Division staff during the plan check process.

Staff believe that lowering area thresholds covered by stormwater requirements would represent a departure from the regional cooperation under MRP 2.0, which has made significant strides in improving stormwater practices. The lower thresholds proposed by CEAC would result in significant added costs for smaller development projects, which in most cases would need to retain additional professional hydrology expertise in the project development phase. Such projects would further incur additional costs by the fees the City would need to impose to cover project review and enforcement activities, the extent of which would be exponentially larger in scale as staff would need to review and enforce several orders of magnitude more qualifying projects. For example, CEAC's proposal to require an additional permit for all paving and repaving activities on private properties would represent an enormous enforcement challenge which could not be met with existing staff resources.

As mandated by MRP 2.0, the City is currently preparing a Green Infrastructure Plan that will set goals for the amount of impervious area within the City to be treated by green infrastructure by 2030 and 2040. Current and future City efforts to incorporate green infrastructure in City Capital Improvement Projects will have the effect of detaining significant stormwater runoff from all sources, including private property.

BACKGROUND

The federal Clean Water Act (CWA) was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. In 1990, the United States Environmental Protection Agency (US EPA) promulgated rules establishing Phase 1 of the National NPDES stormwater program. The Phase 1 program for Municipal Separate Storm Sewer System (MS4s) requires operators that serve populations of 100,000 or greater to implement a stormwater management program as a means to control polluted discharges from these MS4s.

The San Francisco Bay Regional Water Quality Control Board (the Regional Water Board) issued county-wide municipal stormwater permits in the early 1990s to operators of MS4s serving populations over 100,000 (Phase 1). On November 19, 2015, the Regional Water Board re-issued these county-wide municipal stormwater permits as one Municipal Regional Stormwater NPDES Permit (MRP 2.0) to regulate stormwater discharges from municipalities and local agencies in Alameda, Contra Costa, San Mateo, and Santa Clara counties, and the cities of Fairfield, Suisun City, and Vallejo. The City of Berkeley works with the Alameda Countywide Clean Water Program (ACCWP) and the Bay Area Stormwater Management Agencies Association (BASMAA) to ensure compliance with MRP 2.0.

ENVIRONMENTAL SUSTAINABILITY

The CEAC recommendation and the staff recommendation are both consistent with City environmental sustainability goals. Staff resources are currently allocated to compliance with the environmental protection requirements of MRP 2.0.

RATIONALE FOR RECOMMENDATION

Existing enforcement mechanisms and oversight bodies are designed to remediate stormwater runoff in the most cost-effective manner, without imposing significant additional costs on development and staff enforcement capacity.

CONTACT PERSON

Timothy Burroughs, Director, Planning and Development Department, 510-981-7437
Phil Harrington, Director, Public Works Department, 510-981-6303

ACTION CALENDAR

March 26, 2019

To: Honorable Members of the City Council

From: Mayor Jesse Arreguín, and Councilmembers Sophie Hahn, Kate Harrison, and Cheryl Davila

Subject: Considering Multi-year Bidding Processes for Street Paving

RECOMMENDATION

1. Restate the recommendation approved at the December 11, 2018 Council meeting to create a two-year bidding process for street paving to realize savings by (a) reducing by 50% City staff time devoted to bidding and contracting processes over each two year period and (b) benefitting from reduced pricing which may be available for larger contracts that offer greater economies of scale and reduce contractors' bidding and contracting costs.
2. Short-term referral to the City Manager to explore the possibility, feasibility, costs, and benefits of bidding in increments of up to 5 years to encompass entire 5-year paving plans, or other ideas to more rationally and cost-effectively align the paving plan with budget cycles and reduce costs associated with frequent bid cycles for relatively small contracts.

BACKGROUND

In November 2011, the City Auditor provided an analysis of the conditions of Berkeley's 216 miles of streets that showed widespread disrepair resulting from years of underfunding. The impact of the many years of underfunding is compounded by the exponential increase in cost to refurbish streets that have reached "at risk" or "failed" status.

The City of Berkeley's existing Street Rehabilitation and Repair Policy requires that a 5-year Street Rehabilitation Plan be reviewed each year and adopted formally by the City Council. After approval, the City releases bids for one year of paving projects, requiring City Staff and contractors to undertake the bidding process on a yearly basis.

At the December 11, 2018 City Council meeting, Council approved combining the 2018 and 2019 paving projects into the 2019 program after the City was unable to secure a cost effective paving contractor for 2018 in an extremely competitive market.

Permanently moving to a bi-annual or other multi-year bid process will reduce staff time spent on preparing, circulating, evaluating and awarding bids, as well as render Berkeley's projects more attractive to contractors in a very competitive market. It is

expected that larger contracts result in reduced per-mile costs due to better economies of scale and reduced contractor costs associated with yearly bidding processes.

During the December 2018 discussion, Public Works staff suggested that a two year bid process is not only feasible, but also logical as the City's budget and funding processes span two years. While this proposal is already being considered (having been referred by Council at the December 11, 2018 meeting), it is important for Council to reiterate that accelerating paving overall while reducing costs in all ways possible is a key citywide priority, and to include the consideration of longer multi-year bidding cycles to assess whether additional cost savings and integration into existing budget cycles can be achieved.

FINANCIAL IMPLICATIONS

The City is likely to realize long term savings by utilizing two-year or other multi-year bidding processes.

ENVIRONMENTAL SUSTAINABILITY

Improved PCI leads to better fuel efficiency and therefore less greenhouse gas emissions from vehicles.

CONTACT PERSON

| | |
|---------------------------|--------------|
| Mayor Jesse Arreguin | 510-981-7100 |
| Councilmember Sophie Hahn | 510-981-7150 |

Attachments:

1: Annotated Agenda, December 11 2018 Berkeley City Council Meeting, Item 15

Consent Calendar

- 13. Contract: Gallagher & Burk, Inc. for FY 2018 Measure M Street Rehabilitation Project**
From: City Manager
Recommendation: Adopt a Resolution approving plans and specifications for the FY 2018 Measure M Street Rehabilitation Project, Specification No. 18-11179-C (Re-Issued); accepting the bid of Gallagher & Burk, Inc. as the lowest responsive and responsible bidder; and authorizing the City Manager to execute a contract and any amendments, extensions or other change orders until completion of the project in accordance with the approved plans and specifications in an amount not to exceed \$3,863,909.
Financial Implications: Street Capital Improvement Program Fund - \$3,863,909
 Contact: Phillip Harrington, Public Works, 981-6300
Action: Adopted Resolution No. 68,716–N.S.
- 14. Letter of Support on Behalf of SB 3342 - Housing, Opportunity, Mobility, and Equity Act of 2018**
From: Housing Advisory Commission
Recommendation: Direct the City Manager to send a letter of support on behalf of proposed SB 3342, referred to as the HOME Act.
Financial Implications: None
 Contact: Amy Davidson, Commission Secretary, 981-5400
Action: Approved recommendation.
- 15. Public Works Commission Recommendation for the Five-Year Street Rehabilitation Plan**
From: Public Works Commission
Recommendation: Adopt a Resolution that recommends approval of the Five-Year Street Rehabilitation Plan for FY2019 to FY2023 as proposed by Staff.
Financial Implications: See report
 Contact: Nisha Patel, Commission Secretary, 981-6300
Action: Moved to Action Calendar. 8 speakers. M/S/C (Harrison/Droste) to adopt Resolution No. 68,717–N.S. that recommends approval of the Five-Year Street Rehabilitation Plan for FY2019 to FY2023 as proposed by Staff amended to include Milvia Street from Blake Street to Russell Street in FY2019. Provide direction to staff and request additional information from staff as follows:
- Review the Plan after two years
 - Consult the Transportation Commission on the Plan
 - Provide the Lifecycle analysis and the Bike Plan overlay analysis
 - Consider a two-year bid process
 - Annual report to Council on Measure M projects
 - Report to Council on the funding sources for scheduled and completed paving projects
- Vote:** All Ayes.



Kate Harrison
Councilmember District 4

04

ACTION CALENDAR
[], 2019

To: Honorable Mayor and Members of the City Council
From: Councilmembers Harrison, Davila, Bartlett and Hahn
Subject: Adopt an Ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code Prohibiting Natural Gas Infrastructure in New Buildings

RECOMMENDATION

Adopt an ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code (BMC) prohibiting natural gas infrastructure in new buildings with an effective date of [].

POLICY COMMITTEE TRACK

Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee

BACKGROUND

The Community Environmental Advisory Commission (CEAC) unanimously recommended in 2016 that the Council consider prohibiting phasing out new natural gas infrastructure in buildings ~~in 2016~~.¹ That year, Council endorsed the recommendation and directed the CEAC and the Energy Commission to “develop and evaluate a proposal for requiring installations of new cooking, water heating, and/or building heating systems to use technologies which do not burn natural gas.”²

The Berkeley Energy Commission subsequently investigated adopting a ‘reach’ building ordinance mandating use of more efficient electric heat-pump water heaters in new construction, which would have the effect of phasing out natural gas for that purpose, but concluded that California Energy Commission (CEC) policies at the time precluded doing so because of the difficulty of proving that the proposed new requirement will be both cost-effective and at least as efficient as the existing state and federal standards.³

¹ Phasing Out Natural Gas for Heating and Cooking, Community Environmental Advisory Commission, November 1, 2016, https://www.cityofberkeley.info/Clerk/City_Council/2016/11_Nov/Documents/2016-11-01_Item_10_Phasing_Out_Natural_Gas.aspx.

² Annotated Agenda Berkeley City Council Meeting, City Clerk’s Office, November 1, 2016, http://www.cityofberkeley.info/Clerk/City_Council/2016/11_Nov/Documents/11-01_Annotated.aspx.

³ Response to Referral to Community Environmental Advisory Committee (CEAC) and the Berkeley Energy Commission to Evaluate Phasing-out Natural Gas, CEAC Berkeley Energy Commission, December 19, 2017, https://www.cityofberkeley.info/Clerk/City_Council/2017/12_Dec/Documents/2017-12-19_Item_17_Response_to_Referral_to_CEAC_and_BEC.aspx; See also, Local Ordinances Exceeding the 2016 Building Energy Efficiency Standards, California Energy Commission,

Berkeley's ~~Energy Commission found that a reach heat pump code did not pass the cost-effectiveness test due to meet an outdated federal baseline for efficiency calculations restrictive state policies requirements.~~ Consequently, at the time it was determined infeasible to adopt such a reach code under Title 24 Part 6 of the 2016 state Energy Code. Since then, Berkeley's Office of Energy and Sustainable Development (OESD) has been actively ~~lobbying the CEC to adopt working to present~~ energy code amendments ~~to state authorities~~ that facilitate ~~all~~-electric designs, and ~~signed on in support of comments before~~ the California Public Utilities Commission (CPUC) ~~to adopt regulations allowing regarding~~ utility incentives ~~to subsidize for~~ fuel-switching in existing buildings.⁴

This ordinance differs in its approach by acting within the City's authority to prohibit installation of harmful gas infrastructure when issuing building permits for new buildings, and as a result avoids CEC regulations associated with asking to amend efficiency standards. ~~It also avoids the jurisdiction of the California Building Code Commission because this ordinance does not interfere with existing building standards as laid out in the 2016 California Energy Code and as defined by California Building Standards Law Health and Safety Code.~~⁵ Finally, ~~it avoids the jurisdiction of the CPUC. With respect to the CPUC's jurisdiction, A~~although the legislature empowered the Commission to "require each gas corporation to provide bundled basic gas service to all core customers in its service territory," it did not require customers to ~~install fuel gas piping in or in connection with a building, structure or within the property lines of premises behind the gas meter establish gas service with a gas corporation, or preclude cities from prohibiting gas infrastructure within new buildings associated with connection to that service.~~⁶

<https://www.energy.ca.gov/title24/2016standards/ordinances/>; See *also*, CA Public Resources Code Section 25402.1(h)2,

http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC§ionNum=25402.1; CA Building Energy Efficiency Standards Section 10-106

<https://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>

⁴ "Berkeley Support to Phase Out Fossil Fuels with Clean Electrification," OESD, CEC Docket 18-IEPR-09, June 28, 2018,

https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Commissions/Commission_for_Energy/EC2018-07-25_Item%20c-Combined_Comments%20to%20CEC%20and%20CPUC.pdf. See *also*, "Comments of The Natural Resources Defense Council (NRDC) and Sierra Club On The Administrative Law Judge's Ruling Seeking Comments On The Three-Prong Test,"

⁵ California Building Standards Law Health and Safety Code, Division 13, Part 2.5 § 18909, http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC§ionNum=18909

⁶ California Code, Public Utilities Code - PUC § 963, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PUC&division=1.&title=&art=1.&chapter=4.5.&article=2.

This new approach also has the endorsement of the present Berkeley Energy Commission. In December 2018, the Energy Commission presented a draft response to the Council's June 2018 Fossil Free Resolution. As part of a broader strategy to eschew fossil fuels from Berkeley, it recommended that the Council "[p]rohibit gas cooktops and dryers in new residences or a moratorium on new gas hook ups if possible."⁷ Adoption of this ordinance would fulfil this recommendation.

In June 2018 the Berkeley City Council declared a city-wide Climate Emergency (Resolution No. 68,486-N.S.), aimed at reviewing the City's greenhouse gas emission reduction strategies, commitments and progress in light of recent political, scientific and climatic developments.⁸ A 2018 U.N. Intergovernmental Panel on Climate Change (IPCC) report suggested that in order to keep warming under 1.5 degrees Celsius, governments must initiate a dramatic 45% cut in global carbon emissions from 2010 levels by 2030 and reach global 'net zero' around 2050. The time for incremental emissions reduction strategies is over—policymakers must begin implementing "far-reaching and unprecedented changes in all aspects of society."⁹

Berkeley became a climate leader when voters overwhelmingly passed Measure G (Resolution No. 63,518-N.S.) in 2006, calling for the City to reduce greenhouse gas emissions by 33% below 2000 levels by 2020, and 80% by 2050.¹⁰ Measure G resulted in the City Council adopting the 2009 Berkeley Climate Action Plan (Resolution No. 64,480-N.S.), which was written through a community-wide process.¹¹ The plan identified buildings as major contributors to greenhouse gas emissions, representing 26% of community-wide emissions, and recommended the implementation of aggressive building codes favoring low carbon space and water heating

⁷ Fossil Free Berkeley Subcommittee Draft Report for 12/5/2018 Commission Meeting, Berkeley Energy Commission, December, 5, 2018, https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Commissions/Commission_for_Energy/FFB%20Draft%20report%20for%20Dec%205%202018%20Commission%20Meeting%20Final.pdf

⁸ Resolution Endorsing a Climate Emergency, Berkeley City Council, June 12, 2018, https://www.cityofberkeley.info/uploadedFiles/Council_2/Level_3_-_General/Climate%20Emergency%20Declaration%20-%20Adopted%2012%20June%202018%20-%20BCC.pdf

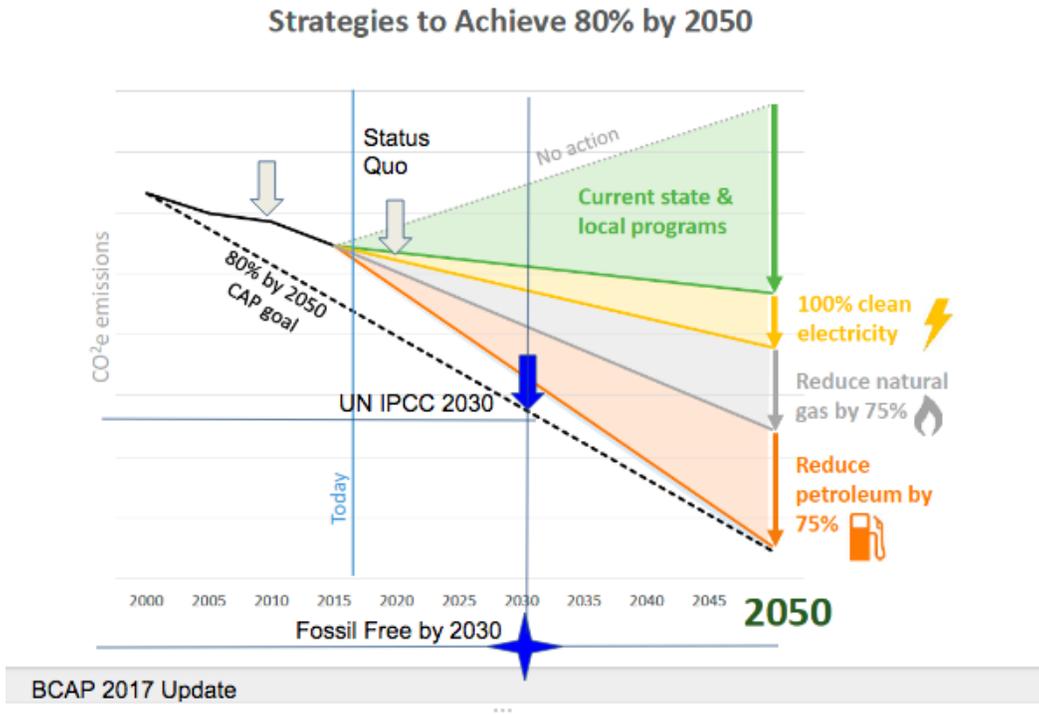
⁹ IPCC Press Release, Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by Governments, 8 October 2018, http://www.ipcc.ch/pdf/session48/pr_181008_P48_spm_en.pdf

¹⁰ Resolution Submitting Measure G, Berkeley City Council, July 18, 2006, <https://www.cityofberkeley.info/citycouncil/resos/2006/63396.pdf>; Ballotpedia, Berkeley Greenhouse Gas Emissions, Measure G (November 2006), November 7, 2006, [https://ballotpedia.org/Berkeley_Greenhouse_Gas_Emissions,_Measure_G_\(November_2006\)#cite_note-quotedisclaimer-1](https://ballotpedia.org/Berkeley_Greenhouse_Gas_Emissions,_Measure_G_(November_2006)#cite_note-quotedisclaimer-1)

¹¹ Office of Energy & Sustainable Development, Berkeley Climate Action Plan Information Page, <https://www.cityofberkeley.info/climate/>.

appliances/infrastructure in new buildings.¹² A 2018 Climate Action Plan progress update presented by Berkeley’s OESD reported that “[c]ombustion of natural gas within Berkeley buildings accounted for 27% of total GHG emissions in 2016 and 73% of building sector GHG emissions.”¹³

According to OESD, the latest and best available data suggest that Berkeley’s 2016 community-wide GHG emissions, including emissions from transportation, building energy use, and solid waste disposal, are approximately 15% below 2000 baseline levels, despite a population increase of approximately 18% in that same time period. Therefore, according to 2016 data, the City is approximately 18% behind its 2020 goal.¹⁴



¹² City of Berkeley, Berkeley Climate Action Plan, June 2009, https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Berkeley%20Climate%20Action%20Plan.pdf, p. 59.

¹³ 2018 Berkeley Climate Action Plan Update, Office of Energy and Sustainable Development, December 6, 2018, https://www.cityofberkeley.info/Clerk/City_Council/2018/12_Dec/Documents/2018-12-06_WS_Item_01_Climate_Action_Plan_Update_pdf.aspxhttps://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/2017-12-07%20WS%20Item%2001%20Climate%20Action%20Plan%20Update.pdf, p. 10.

¹⁴ *Id.*, p. 2.

Specifically, progress towards lowering emissions in new buildings has been encouraging but incremental. To date, the federal, state and local approach to energy use in new buildings has largely been to mandate greater building efficiency and energy conservation, which indirectly results in lower emissions, but does not directly phase out fossil fuel consumption in new buildings. With regard to energy efficiency, Berkeley is in the process of adopting the ambitious, but voluntary, Green Building Standards. ~~In addition, the Planning Department is actively lobbying various California state agencies to level the regulatory playing field for all electric buildings vis-à-vis gas by developing all electric codes and lobbying the CPUC to expand utility incentives for fuel switching.~~¹⁵ In short, while ~~both this~~ initiatives facilitates the electrification and energy efficiency in new buildings, ~~they it~~ does not explicitly and directly prohibit builders from constructing buildings with natural gas infrastructure, a potent and persistent source of greenhouse gas pollution.¹⁶

According to the November 2017 Planning Department Bi-Annual Housing Pipeline Report, the City approved building permits for 525 residential units between January 1, 2014 and November 2017. An additional 952 units received their certificate of occupancy during the same period.¹⁷ Presumably, the vast majority of these units feature natural gas infrastructure. This gas-related emissions problem has been compounded by regional population and job growth coinciding with a considerable 18% rise in Berkeley's population since 2000 as well as the multi-decade useful life of natural gas appliances.¹⁸ As a result, the city has 'locked in' decades of additional carbon pollution, and stands to continue doing so with each new building permit application. The persistence of fossil fuel industry marketing, the regional housing affordability crisis and the associated effort to expand the housing stock will continue to drive local and regional increases in natural gas infrastructure and consumption unless we act now.

This ordinance recognizes that all-electric heating technologies are cost-competitive substitutes to their natural gas counterparts (especially when installed during new construction) and seeks to halt the expansion of natural gas into new buildings in order to stave off the risk of locking in significant additional greenhouse emissions. In the interim between adoption and the effective date, City staff can continue to design and seek approval of all-electric codes to help guide home builders in constructing new buildings with emissions and efficiency best practices.¹⁹

¹⁵ ~~Id., p. 12.~~

¹⁶ The forthcoming 2019 California Energy Code allows for significant natural gas usage.

¹⁷ Referral Response: Bi-Annual Housing Pipeline Report, Planning Department, November 11, 2017, https://www.cityofberkeley.info/Clerk/City_Council/2017/11_Nov/Documents/2017-11-28_Item_21_Referral_Response_Bi-Annual.aspx

¹⁸ 2018 Berkeley Climate Action Plan Update, p. 1.

¹⁹ OESD reported in December 2018 that "Berkeley has worked with other local governments to create a joint cost-effectiveness study request for the California Codes and Standards Program, seeking the

This approach is borne out by recent economic analysis. For example, the Rocky Mountain Institute's 2018 report entitled *The Economics of Electrifying Buildings: How Electric Space and Water Heating Supports Decarbonization of Residential Buildings* considered the carbon emissions reduction opportunities and cost-effectiveness associated with all-electric space and water heating in new single-family construction in Oakland.²⁰ As a direct neighbor, the Oakland study is a useful reference point as Berkeley shares many of its characteristics, including its climate, architecture, the electric and natural gas utility, the Pacific Gas and Electric Company, and membership in East Bay Community Energy.

The report found that “[i]n Oakland, [electric] heat pumps produce universally less carbon emissions compared to natural gas systems.”²¹ Heat pumps are functionally air conditioners that operate in reverse; they capture ambient heat from the air and transfer it inside the building where it can be used to heat water and space. They generate renewable solar energy from the air, and they are so efficient that the Rocky Mountain Institute argues that heat pumps are superior to natural gas appliances on all electric grids except those with the highest coal power content.²² Fortunately, the California grid does not run on coal and features relatively low greenhouse gas emissions.²³ Therefore, heat pumps offer exponential emissions reduction potential in both new and existing buildings, and they are poised to result in additional benefits overtime as tomorrow's electricity becomes substantially less carbon intensive due to market forces, implementation of California State Senate Bill 100 and wider adoption of Community Choice Aggregator renewable electricity services.

The report also found that for new single-family buildings in Oakland, “[electric] heat pumps are universally more cost-effective” than natural gas space and water heaters due to their superior energy efficiency, cost-competitiveness, built-in air conditioning capability, and the avoided cost of connecting to the Pacific Gas & Electric Company's procurement and natural gas distribution system.²⁴ Specifically, the report found that new single-family developments avoiding gas could “save \$1,000 to more than \$24,000

maximum cost-effective efficiency for mixed-fuel and all-electric new construction over a representative sample of building sizes and uses...The findings from this cost-effectiveness study request are expected in early 2019 and will be shared with the Energy Commission and other stakeholders, to evaluate options and opportunities for local amendments to promote deep energy savings and electrification.” See, 2018 Berkeley Climate Action Plan Update, p. 12.

²⁰ Sherri Billimoria, Mike Henchen, Leia Guccione, and Leah Louis-Prescott, “The Economics of Electrifying Buildings: How Electric Space and Water Heating Supports Decarbonization of Residential Buildings,” Rocky Mountain Institute, June 14, 2018, https://rmi.org/wp-content/uploads/2018/06/RMI_Economics_of_Electrifying_Buildings_2018.pdf

²¹ *Id.*, p. 29.

²² *Id.*

²³ *Id.*, p. 9.

²⁴ *Id.*

per single-family home, with a median value of \$8,800.”²⁵ Similarly, in 2017 Stone Energy Associates and Redwood Energy submitted letters to the CEC advising the commission of the significant net cost savings per unit in multi-family projects due to avoiding costly trenching and gas infrastructure.²⁶ In addition, a 2018 Natural Resources Defense Council-commissioned report found that all-electric new multi-family construction “sees upfront capital savings, partly [as] a result of not piping for gas.”²⁷

~~The~~ Berkeley’s Office of Energy and Sustainable Development (OESD) appears to shares the Rocky Mountain Institute’s general outlook on heatpump technology, having ~~years ago officially endorsed heat pumps as arecommended it as a~~ critical means of meeting the goals of envisioned by city’s climate action plan.²⁸

The Environmental Protection Agency, Rocky Mountain Institute, and Berkeley’s OESD staff also emphasize the carbon emissions associated with natural gas stemming from methane leaks. For example, methane gas is released into the atmosphere through hydraulic fracking and other drilling methods.²⁹ Transporting and distributing natural gas through pipelines also can lead to additional leaks, explosions and fires.³⁰ According to the EPA, “[p]ound for pound, the comparative impact of CH₄ [methane] is more than 25 times greater than CO₂ over a 100-year period.”³¹ In addition, according to the Environmental Defense Fund (EDF), “[i]n the first two decades after its release, methane is 84 times more potent than carbon dioxide.” Methane’s enhanced potency,

²⁵ *Id.*, p. 47.

²⁶ CEC Docket No. 17-BSTD-01, Letter from Sean Armstrong, Redwood Energy, to CEC Re: 2019 Building Energy Efficiency Standards Pre-Rulemaking, October 11, 2017, <https://efiling.energy.ca.gov/GetDocument.aspx?tn=221464&DocumentContentId=27248>; CEC Docket No. 16-BSTD-06, Letter from Nehemiah Stone, Stone Energy Associates, to CEC Re: 2019 Building Energy Efficiency Standards Development, April 4, 2017.

²⁷ Asa S. Hopkins, PhD, Kenji Takahashi, Devi Glick, Melissa Whited, “Decarbonization of Heating Energy Use in California Buildings: Technology, Markets, Impacts, and Policy Solutions,” Synapse Energy Economics, Inc., October 16, 2018, <http://www.synapse-energy.com/sites/default/files/Decarbonization-Heating-CA-Buildings-17-092-1.pdf>.

²⁸ 2017 Berkeley Climate Action Plan Update, Office of Energy and Sustainable Development, December 7, 2017, https://www.cityofberkeley.info/Clerk/City_Council/2017/12_Dec/Documents/2017-12-07_WS_Item_01_Climate_Action_Plan_Update.aspx; See also, Residential Heat Pump Water Heaters: Replacing a Gas Water Heater, OESD, <https://www.cityofberkeley.info/HPWH/>. According to OESD, heat pumps “use electricity instead of gas and therefore have the potential to use renewable energy...[and] work like a refrigerator in reverse — they use electricity and a refrigerant to take heat from the air and transfer” it to the hot water tank or heating ducts.

²⁹ The Economics of Electrifying Buildings, p. 26.

³⁰ See e.g., Rebecca Bowe, Lisa Pickoff-White, Five Years After Deadly San Bruno Explosion: Are We Safer?, KQED, September 8, 2015, <https://www.kqed.org/news/10667274/five-years-after-deadly-san-bruno-explosion-are-we-safer>; See also, David Siders, Jerry Brown declares emergency around Southern California gas leak, January 6, 2016, <https://www.sacbee.com/news/politics-government/capitol-alert/article53353615.html>.

³¹ “Overview of Greenhouse Gases,” U.S. Environmental Protection Agency, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane>

particularly in the short term, results in more immediate warming and thus warrants greater urgency. EDF estimates that “[a]bout 25% of the manmade global warming we’re experiencing is caused by methane emissions.”³² Consequently, the Rocky Mountain Institute report called upon cities to immediately “[s]top supporting the expansion of the natural gas distribution system, including for new homes.” Furthermore, the report cautioned that natural gas “infrastructure will be obsolete in a highly electrified future, and gas ratepayers face significant stranded asset [financial] risk” by staying on natural gas.³³

The proposed ordinance prohibits builders from applying for building permits that include establishing new or connecting to existing gas utility service for heat water, space, food etc. This legislation will have the effect of ushering in all-electric new buildings in the City of Berkeley, avoiding significant new greenhouse emissions and diverting City attention and resources to other critical sources of emissions.

The ordinance will help prevent deadly home fires that start from an open flame and are fueled by gas lines. For example, the City of Santa Rosa is actively reconsidering the role of natural gas in new buildings because of the destructive 2017 Tubbs firestorm.³⁴ In 2017 the U.S. Geological Survey conducted the *HayWired Scenario* simulating “a 7.0 quake on the Hayward fault line with the epicenter in Oakland.” The agency’s report predicted that “about 450 large fires could result in a loss of residential and commercial building floor area equivalent to more than 52,000 single-family homes and cause property (building and content) losses approaching \$30 billion.”³⁵ The report identified ruptured gas lines as a key fire risk factor. This finding mirrors the gas fires resulting from the Loma Prieta (1989) and Northridge (1994) earthquakes.

The ordinance will also improve indoor and outdoor air quality by eliminating toxic byproducts of natural gas. A 2013 Lawrence Berkeley National Laboratory study found that “60 percent of homes in the state that cook at least once a week with a gas stove” produce toxic levels of nitrogen dioxide, formaldehyde and carbon monoxide exceeding federal standards for outdoor air quality. Although electric stoves generate toxic particulate matter resulting from the cooking process and dust volatilization, researchers found that gas stoves are more detrimental to indoor air quality because they produce

³² “Methane: The other important greenhouse gas,” Environmental Defense Fund, <https://www.edf.org/climate/methane-other-important-greenhouse-gas>.

³³ The Economics of Electrifying Buildings, p. 10.

³⁴ Will Schmitt, Santa Rosa council considers requirement for new homes to be independent of natural gas, Press Democrat, November 10, 2018, <https://www.pressdemocrat.com/news/8899687-181/santa-rosa-council-considers-requirement>.

³⁵ “The HayWired earthquake scenario—Engineering implications,” U.S. Geological Survey, April 18, 2018, <https://pubs.er.usgs.gov/publication/sir20175013v2>.

significant toxic fossil fuel combustion byproducts not associated with electric stoves.³⁶
This issue is compounded by state efficiency standards, which are designed to trap air indoors.

Rapid improvements in electric cooktop technology suggest that the City of Berkeley can simultaneously maintain its rich culinary culture while taking action to reduce fossil fuel emissions in new buildings.³⁷

Emergency action and leadership is needed to prevent the locking in of additional natural gas greenhouse gasses from new buildings. By adopting this ordinance, the City of Berkeley has an opportunity to make further progress towards delivering upon its responsibilities under Measure G, the 2009 Climate Action Plan, Fossil Fuel Berkeley Resolution (as referred), and the Climate Emergency Declaration.

FINANCIAL IMPLICATIONS

Staff time will be necessary to implement the new building permit regulations.

ENVIRONMENTAL SUSTAINABILITY

Prohibiting natural gas infrastructure in new buildings will prevent the release of significant additional natural gas-related greenhouse gasses from new buildings.

CONTACT PERSON

Councilmember Kate Harrison, Council District 4, (510) 981-7140

Attachments:

1. Proposed Ordinance Adding BMC Chapter 19.84

³⁶ "Pollution in the Home: Kitchens Can Produce Hazardous Levels of Indoor Pollutants," Julie Chao, Lawrence Berkeley National Laboratory, July 23, 2013, <https://newscenter.lbl.gov/2013/07/23/kitchens-can-produce-hazardous-levels-of-indoor-pollutants/>.

³⁷ While natural gas ranges are often regarded by home cooks as superior to electric ranges, modern induction range technology offers a cooking experience that arguably provides faster heat response, easier clean up and more temperature precision than gas. See e.g., Cooktop Showdown – Gas vs. Electric vs. Induction, A Finer Touch Construction, <https://aftconstruction.com/cooktop-showdown-electric-vs-gas-vs-induction/>. Appliance manufacturer Samsung introduced a new induction cooktop featuring a "virtual" LED flame that mimics the visual response of a gas flame. See also, 36" Induction Cooktop with Virtual Flame™, Samsung US, <https://www.samsung.com/us/home-appliances/cooktops-and-hoods/induction-cooktops/36--built-in-induction-cooktop-with-flex-cookzone-nz36k7880ug-aa/>.

ORDINANCE NO. –N.S.

ADDING A NEW CHAPTER 19.84 TO THE BERKELEY MUNICIPAL CODE
PROHIBITING NATURAL GAS INFRASTRUCTURE IN NEW BUILDINGS EFFECTIVE



BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That Chapter 19.84 of the Berkeley Municipal Code is added to read as follows:

Chapter 19.84

PROHIBITION OF NATURAL GAS INFRASTRUCTURE IN NEW BUILDINGS

Sections:

19.84.010 Findings and Purpose.

19.84.020 Applicability.

19.84.030 Definitions.

19.84.040 Prohibited Natural Gas Infrastructure in New Buildings

19.81.050 Exception.

19.81.060 Severability.

19.81.070 Effective Date.

19.84.010 Findings and Purpose.

The Council finds and expressly declares as follows:

- A. Available scientific evidence suggests that natural gas combustion, procurement and transportation produces significant greenhouse gas emissions that contribute to global warming and climate change.
- B. The following addition to the Berkeley Municipal Code is reasonably necessary because of local climatic, geologic and health and safety conditions as listed below:
 - (1) As a coastal city located on the San Francisco Bay, Berkeley is vulnerable to sea level rise, and human activities releasing greenhouse gases into the atmosphere cause increases in worldwide average temperature, which contribute to melting of glaciers and thermal expansion of ocean water – resulting in rising sea levels.
 - (2) Berkeley is already experiencing the repercussions of excessive greenhouse gas emissions as rising sea levels threaten the City’s shoreline and infrastructure, have caused significant erosion, have increased impacts to infrastructure during extreme tides, and have caused the City to expend funds to modify the sewer system.
 - (3) Berkeley is situated along a wildland-urban interface and is extremely vulnerable to wildfires and firestorms, and human activities releasing greenhouse gases into the atmosphere cause increases in worldwide average temperature, drought conditions, vegetative fuel, and length of fire seasons—all of which contribute to the likelihood and consequences of fire.
 - ~~(3)~~(4) Berkeley’s natural gas building infrastructure, a potentially significant source of fire during earthquakes and other fire events, is precariously situated along or near the Hayward fault, which is likely to produce a large earthquake in the Bay Area.
 - ~~(4)~~(5) Some subpopulations of Berkeley residents are especially vulnerable to heat events.
 - ~~(5)~~(6) Berkeley residents disproportionately suffer from asthma and other health conditions associated with poor indoor and outdoor air quality due ~~exacerbated~~ by ~~to~~ the combustion of natural gas fossil fuel.
- C. The people of Berkeley, as codified through Measure G (Resolution No. 63,518-N.S.), the City of Berkeley Climate Action Plan (Resolution No. 64,480-N.S.), and Berkeley Climate Emergency Declaration (Resolution No. 68,486-N.S.) all recognize that rapid, far-reaching and unprecedented changes in all aspects of society are required to limit global warming and the resulting environmental threat posed by climate change, including the prompt phasing out of natural gas as a fuel for heating and cooling infrastructure in new buildings.
- D. Substitute electric heating and cooling infrastructure in new buildings fueled by less greenhouse gas intensive electricity is linked to significantly lower greenhouse gas emissions and is cost competitive because of the cost savings associated with all-electric designs that avoid new gas infrastructure.
- E. All-electric building design benefits the health, welfare, and resiliency of Berkeley and its residents.

- F. The most cost-effective time to integrate electrical infrastructure is during building construction because workers are already on-site, utility service upgrade costs are lower, permitting and administrative costs are lower, natural gas piping costs are avoided, and it is more cost-effective to include such systems in construction financing.
- G. It is the intent of the council to eliminate obsolete natural gas infrastructure and associated greenhouse gas emissions in new buildings where all-electric infrastructure can be most practicably integrated, thereby reducing the environmental and health hazards produced by the consumption and transportation of ~~fossil fuel~~natural gas.

19.84.020 Applicability.

- A. The requirements of this Chapter shall apply to all building permit applications for New Buildings proposed to be located in whole or in part within the City. However, it shall not apply to agencies that are not subject to City authority.
- B. The requirements of this Chapter shall not apply to the use of portable propane appliances for outdoor cooking and heating.

19.84.030 Definitions.

- A. “Accessory Dwelling Unit” shall have the same meaning as specified in Section 65852.2 of the Government Code.
- ~~A.B. “Greenhouse Gas Emissions” mean gases that trap heat in the atmosphere.~~
- ~~B. “Gas Service” shall have the same meaning as specified in the Pacific Gas and Electric Company’s 2017-2018 Electric & Gas Service Requirements (TD-7001M) Greenbook.~~
- C. “Natural Gas” shall have the same meaning as “Fuel Gas” as defined in section 208.0 of the 2016 California Plumbing Code.
- D. “Natural Gas Infrastructure” shall be defined as fuel gas piping, other than service pipe, in or in connection with a building, structure or within the property lines of premises, extending from the point of delivery at the gas meter as specified in sections 1301.0 and 1302.1 of the 2016 California Mechanical Code.~~new natural gas piping and equipment associated with establishing new, or connecting to existing Gas Service, and appliances fueled by Natural Gas.~~
- E. “New Building” shall be defined as ~~a~~ new buildings or accessory buildings associated with a valid building permit application on or after the effective date of this chapter.

19.84.040 Prohibited Natural Gas- Infrastructure in New Buildings

No building permit shall be issued for the construction of a New Building featuring the installation of ~~new~~ Natural Gas Infrastructure ~~associated with new Gas Service or connection to existing Gas Service.~~

19.84.050 Exception.

- A. The requirements of this Chapter shall not apply to Accessory Dwelling Units.
- ~~A.B. Notwithstanding the requirements of this chapter and the Greenhouse Gas Emissions associated with Natural Gas Infrastructure~~natural Gas Service and infrastructure~~, the City Manager or their authorized representative may issue a~~

building permit provided that a majority of the Mayor and Council finds that the permit serves the public interest.

19.84.060 Severability.

If any word, phrase, sentence, part, section, subsection, or other portion of this Chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the prescribed application thereof, shall be severable, and the remaining provisions of this Chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The City Council hereby declares that it would have passed this title, and each section, subsection, sentence, clause and phrase of this Chapter, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases is declared invalid or unconstitutional.

19.84.070 Effective date.

The provisions of this chapter shall become effective on [].



Kate Harrison
Councilmember District 4

ACTION CALENDAR
March 12, 2019

To: Honorable Mayor and Members of the City Council
From: Councilmembers Harrison, Davila, Bartlett and Hahn
Subject: Adopt an Ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code Prohibiting Natural Gas Infrastructure in New Buildings

RECOMMENDATION

Adopt an ordinance adding a new Chapter 19.84 to the Berkeley Municipal Code (BMC) prohibiting natural gas infrastructure in new buildings with an effective date of [].

POLICY COMMITTEE TRACK

Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee

BACKGROUND

The Community Environmental Advisory Commission (CEAC) unanimously recommended prohibiting natural gas in buildings in 2016.¹ That year, Council endorsed the recommendation and directed the CEAC and the Energy Commission to “develop and evaluate a proposal for requiring installations of new cooking, water heating, and/or building heating systems to use technologies which do not burn natural gas.”²

The Berkeley Energy Commission subsequently investigated adopting a ‘reach’ building ordinance mandating use of more efficient electric heat-pump water heaters in new construction, which would have the effect of phasing out natural gas for that purpose, but concluded that California Energy Commission (CEC) policies at the time precluded doing so because of the difficulty of proving that the proposed new requirement will be both cost-effective and at least as efficient as the existing state and federal standards.³

¹ Phasing Out Natural Gas for Heating and Cooking, Community Environmental Advisory Commission, November 1, 2016, https://www.cityofberkeley.info/Clerk/City_Council/2016/11_Nov/Documents/2016-11-01_Item_10_Phasing_Out_Natural_Gas.aspx.

² Annotated Agenda Berkeley City Council Meeting, City Clerk’s Office, November 1, 2016, http://www.cityofberkeley.info/Clerk/City_Council/2016/11_Nov/Documents/11-01_Annotated.aspx.

³ Response to Referral to Community Environmental Advisory Committee (CEAC) and the Berkeley Energy Commission to Evaluate Phasing-out Natural Gas, CEAC, December 19, 2017, https://www.cityofberkeley.info/Clerk/City_Council/2017/12_Dec/Documents/2017-12-19_Item_17_Response_to_Referral_to_CEAC_and_BEC.aspx. See also, Local Ordinances Exceeding the 2016 Building Energy Efficiency Standards, California Energy Commission, <https://www.energy.ca.gov/title24/2016standards/ordinances/>; See also, CA Public Resources Code Section 25402.1(h)2,

Berkeley's proposed reach heat pump code could not pass the cost-effectiveness test due to an outdated federal baseline for efficiency calculations. Consequently, at the time it was determined infeasible to adopt such a reach code under Title 24 Part 6 of the 2016 state Energy Code. Since then, Berkeley's Office of Energy and Sustainable Development (OESD) has been actively lobbying the CEC to adopt energy code amendments that facilitate all-electric designs, and the California Public Utilities Commission (CPUC) to adopt regulations allowing utility incentives to subsidize fuel-switching in existing buildings.⁴

This ordinance differs in its approach by acting within the City's authority to prohibit installation of harmful gas infrastructure when issuing building permits for new buildings, and as a result avoids CEC regulations associated with asking to amend efficiency standards. It also avoids the jurisdiction of the California Building Code Commission because this ordinance does not interfere with existing building standards as laid out in the 2016 California Energy Code and as defined by California Building Standards Law Health and Safety Code.⁵ Finally, it avoids the jurisdiction of the CPUC. Although the legislature empowered the Commission to "require each gas corporation to provide bundled basic gas service to all core customers in its service territory," it did not require customers to establish gas service with a gas corporation, or preclude cities from prohibiting gas infrastructure associated with connection to that service.⁶

This new approach also has the endorsement of the present Berkeley Energy Commission. In December 2018, the Energy Commission presented a draft response to the Council's June 2018 Fossil Free Resolution. As part of a broader strategy to eschew fossil fuels from Berkeley, it recommended that the Council "[p]rohibit gas cooktops and dryers in new residences or a moratorium on new gas hook ups if possible."⁷ Adoption of this ordinance would fulfil this recommendation.

http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC§ionNum=25402.1.; CA Building Energy Efficiency Standards Section 10-106

<https://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>

⁴ Berkeley Support to Phase Out Fossil Fuels with Clean Electrification, OESD, CEC Docket 18-IEPR-09, June 28, 2018, https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Commissions/Commission_for_Energy/EC2018-07-25_Item%207c-Combined_Comments%20to%20CEC%20and%20CPUC.pdf.

⁵ California Building Standards Law Health and Safety Code, Division 13, Part 2.5 § 18909, http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC§ionNum=18909

⁶ California Code, Public Utilities Code - PUC § 963, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PUC&division=1.&title=&art=1.&chapter=4.5.&article=2.

⁷ Fossil Free Berkeley Subcommittee Draft Report for 12/5/2018 Commission Meeting, Berkeley Energy Commission, December, 5, 2018, https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-

In June 2018 the Berkeley City Council declared a city-wide Climate Emergency (Resolution No. 68,486-N.S.), aimed at reviewing the City's greenhouse gas emission reduction strategies, commitments and progress in light of recent political, scientific and climatic developments.⁸ A 2018 UN Intergovernmental Panel on Climate Change (IPCC) report suggested that in order to keep warming under 1.5 degrees Celsius, governments must initiate a dramatic 45% cut in global carbon emissions from 2010 levels by 2030 and reach global 'net zero' around 2050. The time for incremental emissions reduction strategies is over—policymakers must begin implementing “far-reaching and unprecedented changes in all aspects of society.”⁹

Berkeley became a climate leader when voters overwhelmingly passed Measure G (Resolution No. 63,518-N.S.) in 2006, calling for the City to reduce greenhouse gas emissions by 33% below 2000 levels by 2020, and 80% by 2050.¹⁰ Measure G resulted in the City Council adopting the 2009 Berkeley Climate Action Plan (Resolution No. 64,480-N.S.), which was written through a community-wide process.¹¹ The plan identified buildings as major contributors to greenhouse gas emissions, representing 26% of community-wide emissions, and recommended the implementation of aggressive building codes favoring low carbon space and water heating appliances/infrastructure in new buildings.¹² A 2018 Climate Action Plan progress update presented by Berkeley's OESD reported that “[c]ombustion of natural gas within Berkeley buildings accounted for 27% of total GHG emissions in 2016 and 73% of building sector GHG emissions.”¹³

[_Commissions/Commission_for_Energy/FFB%20Draft%20report%20for%20Dec%205%202018%20Commission%20Meeting%20Final.pdf](#)

⁸ Resolution Endorsing a Climate Emergency, Berkeley City Council, June 12, 2018,

https://www.cityofberkeley.info/uploadedFiles/Council_2/Level_3_-_General/Climate%20Emergency%20Declaration%20-%20Adopted%2012%20June%202018%20-%20BCC.pdf

⁹ IPCC Press Release, Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by Governments, 8 October 2018,

http://www.ipcc.ch/pdf/session48/pr_181008_P48_spm_en.pdf

¹⁰ Resolution Submitting Measure G, Berkeley City Council, July 18, 2006,

<https://www.cityofberkeley.info/citycouncil/resos/2006/63396.pdf>; Ballotpedia, Berkeley Greenhouse Gas Emissions, Measure G (November 2006), November 7, 2006, [https://ballotpedia.org/Berkeley_Greenhouse_Gas_Emissions,_Measure_G_\(November_2006\)#cite_note-quotedisclaimer-1](https://ballotpedia.org/Berkeley_Greenhouse_Gas_Emissions,_Measure_G_(November_2006)#cite_note-quotedisclaimer-1)

¹¹ Office of Energy & Sustainable Development, Berkeley Climate Action Plan Information Page,

<https://www.cityofberkeley.info/climate/>.

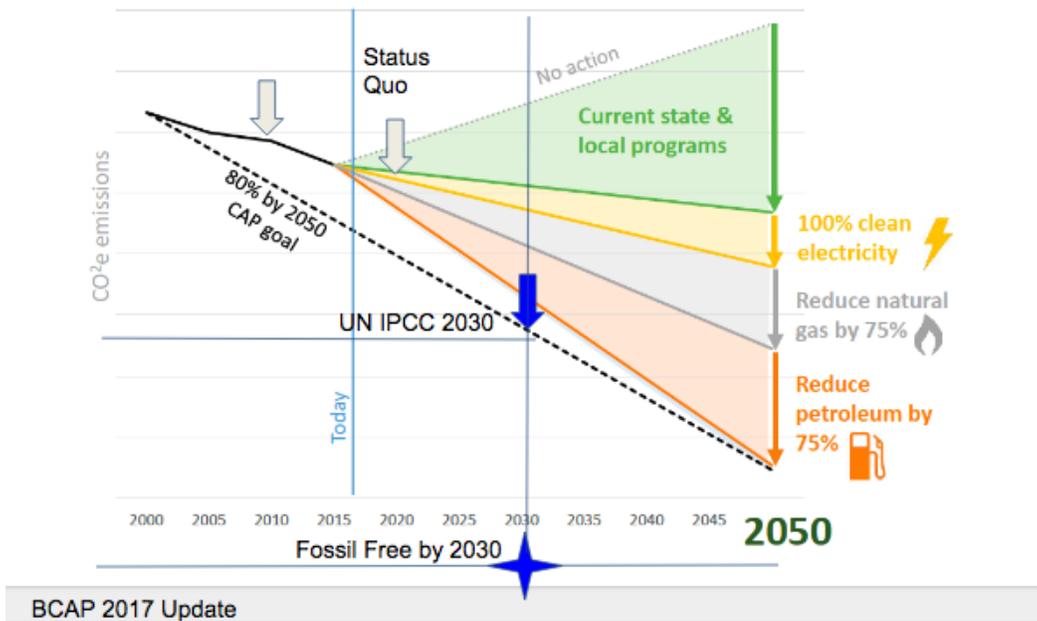
¹² City of Berkeley, Berkeley Climate Action Plan, June 2009,

https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Berkeley%20Climate%20Action%20Plan.pdf, p. 59.

¹³ 2018 Berkeley Climate Action Plan Update, Office of Energy and Sustainable Development, December 6, 2018, https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-

According to OESD, the latest and best available data suggest that Berkeley’s 2016 community-wide GHG emissions, including emissions from transportation, building energy use, and solid waste disposal, are approximately 15% below 2000 baseline levels, despite a population increase of approximately 18% in that same time period. Therefore, according to 2016 data, the City is approximately 18% behind its 2020 goal.

Strategies to Achieve 80% by 2050



Specifically, progress towards lowering emissions in new buildings has been encouraging but incremental. To date, the federal, state and local approach to energy use in new buildings has largely been to mandate greater building efficiency and energy conservation, which indirectly results in lower emissions, but does not directly phase out fossil fuel consumption in new buildings. With regard to energy efficiency, Berkeley is in the process of adopting the ambitious, but voluntary, Green Building Standards. In addition, the Planning Department is actively lobbying various California state agencies to level the regulatory playing field for all-electric buildings vis-à-vis gas by developing all-electric codes and lobbying the CPUC to expand utility incentives for fuel switching.¹⁴ In short, while both initiatives facilitate the electrification and energy efficiency in new buildings, they do not explicitly and directly prohibit builders from constructing buildings

¹⁴ [Energy_and_Sustainable_Development/2017-12-07%20WS%20Item%20001%20Climate%20Action%20Plan%20Update.pdf](#), p. 10.
¹⁴ *Id.*, p. 12.

with natural gas infrastructure, a potent and persistent source of greenhouse gas pollution.¹⁵

According to the November 2017 Planning Department Bi-Annual Housing Pipeline Report, the City approved building permits for 525 residential units between January 1, 2014 and November 2017. An additional 952 units received their certificate of occupancy during the same period.¹⁶ Presumably, the vast majority of these units feature natural gas infrastructure. This gas-related emissions problem has been compounded by regional population and job growth coinciding with a considerable 18% rise in Berkeley's population since 2000 as well as the multi-decade useful life of natural gas appliances.¹⁷ As a result, the city has 'locked in' decades of additional carbon pollution, and stands to continue doing so with each new building permit application. The persistence of fossil fuel industry marketing, the regional housing affordability crisis and the associated effort to expand the housing stock will continue to drive local and regional increases in natural gas infrastructure and consumption unless we act now.

This ordinance recognizes that all-electric heating technologies are cost-competitive substitutes to their natural gas counterparts (especially when installed during new construction) and seeks to halt the expansion of natural gas into new buildings in order to stave off the risk of locking in significant additional greenhouse emissions. In the interim between adoption and the effective date, City staff can continue to design and seek approval of all-electric codes to help guide home builders in constructing new buildings with emissions and efficiency best practices.¹⁸

This approach is borne out by recent economic analysis. For example, the Rocky Mountain Institute's 2018 report entitled *The Economics of Electrifying Buildings: How Electric Space and Water Heating Supports Decarbonization of Residential Buildings* considered the carbon emissions reduction opportunities and cost-effectiveness associated with all-electric space and water heating in new single-family construction in Oakland.¹⁹ As a direct neighbor, the Oakland study is a useful reference point as

¹⁵ The forthcoming 2019 California Energy Code allows for significant natural gas usage.

¹⁶ Referral Response: Bi-Annual Housing Pipeline Report, Planning Department, November 11, 2017, https://www.cityofberkeley.info/Clerk/City_Council/2017/11_Nov/Documents/2017-11-28_Item_21_Referral_Response_Bi-Annual.aspx

¹⁷ 2018 Berkeley Climate Action Plan Update, p. 1.

¹⁸ OESD reported in December 2018 that "Berkeley has worked with other local governments to create a joint cost-effectiveness study request for the California Codes and Standards Program, seeking the maximum cost-effective efficiency for mixed-fuel and all-electric new construction over a representative sample of building sizes and uses...The findings from this cost-effectiveness study request are expected in early 2019 and will be shared with the Energy Commission and other stakeholders, to evaluate options and opportunities for local amendments to promote deep energy savings and electrification." See, 2018 Berkeley Climate Action Plan Update, p. 12.

¹⁹ Sherri Billimoria, Mike Henchen, Leia Guccione, and Leah Louis-Prescott, *The Economics of Electrifying Buildings: How Electric Space and Water Heating Supports Decarbonization of*

Berkeley shares many of its characteristics, including its climate, architecture, the electric and natural gas utility, the Pacific Gas and Electric Company, and membership in East Bay Community Energy.

The report found that “[i]n Oakland, [electric] heat pumps produce universally less carbon emissions compared to natural gas systems.”²⁰ Heat pumps are functionally air conditioners that operate in reverse; they capture ambient heat from the air and transfer it inside the building where it can be used to heat water and space. They generate renewable solar energy from the air, and they are so efficient that the Rocky Mountain Institute argues that heat pumps are superior to natural gas appliances on all electric grids except those with the highest coal power content.²¹ Fortunately, the California grid does not run on coal and features relatively low greenhouse gas emissions.²² Therefore, heat pumps offer exponential emissions reduction potential in both new and existing buildings, and they are poised to result in additional benefits overtime as tomorrow’s electricity becomes substantially less carbon intensive due to market forces, implementation of California State Senate Bill 100 and wider adoption of Community Choice Aggregator renewable electricity services.

The report also found that for new single-family buildings in Oakland, “[electric] heat pumps are universally more cost-effective” than natural gas space and water heaters due to their superior energy efficiency, cost-competitiveness, built-in air conditioning capability, and the avoided cost of connecting to the Pacific Gas & Electric Company’s procurement and natural gas distribution system.²³ Specifically, the report found that new single family developments avoiding gas could “save \$1,000 to more than \$24,000 per single-family home, with a median value of \$8,800.”²⁴ Similarly, in 2017 Stone Energy Associates and Redwood Energy submitted letters to the CEC advising the commission of the significant net cost savings per unit in multi-family projects due to avoiding costly trenching and gas infrastructure.²⁵

The Berkeley’s Office of Energy and Sustainable Development (OESD) shares the Rocky Mountain Institute’s general outlook on heap pump technology, having years ago

Residential Buildings. Rocky Mountain Institute, June 14, 2018, https://rmi.org/wp-content/uploads/2018/06/RMI_Economics_of_Electrifying_Buildings_2018.pdf

²⁰ *Id.*, p. 29.

²¹ *Id.*

²² *Id.*, p. 9.

²³ *Id.*

²⁴ *Id.*, p. 47.

²⁵ CEC Docket No. 17-BSTD-01, Letter from Sean Armstrong, Redwood Energy, to CEC Re: 2019 Building Energy Efficiency Standards Pre-Rulemaking, October 11, 2017, <https://efiling.energy.ca.gov/GetDocument.aspx?tn=221464&DocumentContentId=27248>; CEC Docket No. 16-BSTD-06, Letter from Nehemiah Stone, Stone Energy Associates, to CEC Re: 2019 Building Energy Efficiency Standards Development, April 4, 2017.

officially endorsed heat pumps as a critical means of meeting the goals of envisioned by city's climate action plan.²⁶

The Environmental Protection Agency, Rocky Mountain Institute, and Berkeley's OESD staff also emphasize the carbon emissions associated with natural gas stemming from methane leaks. For example, methane gas is released into the atmosphere through hydraulic fracking and other drilling methods.²⁷ Transporting and distributing natural gas through pipelines also can lead to additional leaks, explosions and fires.²⁸ According to the EPA, "[p]ound for pound, the comparative impact of CH₄ [methane] is more than 25 times greater than CO₂ over a 100-year period."²⁹ In addition, according to the Environmental Defense Fund (EDF), "[i]n the first two decades after its release, methane is 84 times more potent than carbon dioxide." Methane's enhanced potency, particularly in the short term, results in more immediate warming and thus warrants greater urgency. EDF estimates that "[a]bout 25% of the manmade global warming we're experiencing is caused by methane emissions."³⁰ Consequently, the Rocky Mountain Institute report called upon cities to immediately "[s]top supporting the expansion of the natural gas distribution system, including for new homes." Furthermore, the report cautioned that natural gas "infrastructure will be obsolete in a highly electrified future, and gas ratepayers face significant stranded asset [financial] risk" by staying on natural gas.³¹

The proposed ordinance prohibits builders from applying for building permits that include establishing new or connecting to existing gas utility service for heat water, space, food etc. This legislation will have the effect of ushering in all-electric new buildings in the City of Berkeley, avoiding significant new greenhouse emissions and diverting City attention and resources to other critical sources of emissions. The ordinance will also improve indoor and outdoor air quality by eliminating toxic byproducts of natural gas combustion and will help prevent deadly home fires that start

²⁶ Residential Heat Pump Water Heaters: Replacing a Gas Water Heater, OESD, <https://www.cityofberkeley.info/HPWH/>. According to OESD, heat pumps "use electricity instead of gas and therefore have the potential to use renewable energy...[and] work like a refrigerator in reverse — they use electricity and a refrigerant to take heat from the air and transfer" it to the hot water tank or heating ducts.

²⁷ The Economics of Electrifying Buildings, p. 26.

²⁸ See e.g., Rebecca Bowe, Lisa Pickoff-White, Five Years After Deadly San Bruno Explosion: Are We Safer?, KQED, September 8, 2015, <https://www.kqed.org/news/10667274/five-years-after-deadly-san-bruno-explosion-are-we-safer>; See also, David Siders, Jerry Brown declares emergency around Southern California gas leak, January 6, 2016, <https://www.sacbee.com/news/politics-government/capitol-alert/article53353615.html>.

²⁹ "Overview of Greenhouse Gases," U.S. Environmental Protection Agency, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane>

³⁰ "Methane: The other important greenhouse gas," Environmental Defense Fund, <https://www.edf.org/climate/methane-other-important-greenhouse-gas>.

³¹ The Economics of Electrifying Buildings, p. 10.

from an open flame and are fueled by gas lines. For example, the City of Santa Rosa is actively reconsidering the role of natural gas in new buildings because of the destructive 2017 Tubbs firestorm.³²

Rapid improvements in electric cooktop technology suggest that the City of Berkeley can simultaneously maintain its rich culinary culture while taking action to reduce fossil fuel emissions.³³

Emergency action and leadership is needed to prevent the locking in of additional natural gas greenhouse gasses from new buildings. By adopting this ordinance, the City of Berkeley has an opportunity to make further progress towards delivering upon its responsibilities under Measure G, the 2009 Climate Action Plan, Fossil Fuel Berkeley Resolution (as referred), and the Climate Emergency Declaration.

FINANCIAL IMPLICATIONS

Staff time will be necessary to implement the new building permit regulations.

ENVIRONMENTAL SUSTAINABILITY

Prohibiting natural gas infrastructure in new buildings will prevent the release of significant additional natural gas-related greenhouse gasses from new buildings.

CONTACT PERSON

Councilmember Kate Harrison, Council District 4, (510) 981-7140

Attachments:

1. Proposed Ordinance Adding BMC Chapter 19.84

³² Will Schmitt, Santa Rosa council considers requirement for new homes to be independent of natural gas, Press Democrat, November 10, 2018, <https://www.pressdemocrat.com/news/8899687-181/santa-rosa-council-considers-requirement>.

³³ While natural gas ranges are often regarded by home cooks as superior to electric ranges, modern induction range technology offers a cooking experience that arguably provides faster heat response, easier clean up and more temperature precision than gas. See e.g., Cooktop Showdown – Gas vs. Electric vs. Induction, A Finer Touch Construction, <https://aftconstruction.com/cooktop-showdown-electric-vs-gas-vs-induction/>. Appliance manufacturer Samsung introduced a new induction cooktop featuring a “virtual” LED flame that mimics the visual response of a gas flame. See also, 36" Induction Cooktop with Virtual Flame™, Samsung US, <https://www.samsung.com/us/home-appliances/cooktops-and-hoods/induction-cooktops/36--built-in-induction-cooktop-with-flex-cookzone-nz36k7880ug-aa/>.

ORDINANCE NO. –N.S.

ADDING A NEW CHAPTER 19.84 TO THE BERKELEY MUNICIPAL CODE
PROHIBITING NATURAL GAS INFRASTRUCTURE IN NEW BUILDINGS EFFECTIVE



BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That Chapter 19.84 of the Berkeley Municipal Code is added to read as follows:

Chapter 19.84

PROHIBITION OF NATURAL GAS INFRASTRUCTURE IN NEW BUILDINGS

Sections:

19.84.010 Findings and Purpose.

19.84.020 Applicability.

19.84.030 Definitions.

19.84.040 Prohibited Natural Gas Infrastructure in New Buildings

19.81.050 Exception.

19.81.060 Severability.

19.81.070 Effective Date.

19.84.010 Findings and Purpose.

The Council finds and expressly declares as follows:

- A. Available scientific evidence suggests that natural gas combustion, procurement and transportation produces significant greenhouse gas emissions that contribute to global warming and climate change.
- B. The following addition to the Berkeley Municipal Code is reasonably necessary because of local climatic conditions as listed below.
 - (1) As a coastal city located on the San Francisco Bay, Berkeley is vulnerable to sea level rise, and human activities releasing greenhouse gases into the atmosphere cause increases in worldwide average temperature, which contribute to melting of glaciers and thermal expansion of ocean water – resulting in rising sea levels.
 - (2) Berkeley is already experiencing the repercussions of excessive greenhouse gas emissions as rising sea levels threaten the City’s shoreline and infrastructure, have caused significant erosion, have increased impacts to infrastructure during extreme tides, and have caused the City to expend funds to modify the sewer system.
 - (3) Berkeley is situated along a wildland-urban interface and is extremely vulnerable to wildfires and firestorms, and human activities releasing greenhouse gases into the atmosphere cause increases in worldwide average temperature, drought conditions, vegetative fuel, and length of fire seasons—all of which contribute to the likelihood and consequences of fire.
 - (4) Some subpopulations of Berkeley residents are vulnerable to heat events.
 - (5) Berkeley residents disproportionately suffer from asthma and other health conditions associated with poor air quality due to the combustion of fossil fuel.
- C. The people of Berkeley, as codified through Measure G (Resolution No. 63,518-N.S.), the City of Berkeley Climate Action Plan (Resolution No. 64,480-N.S.), and Berkeley Climate Emergency Declaration (Resolution No. 68,486-N.S.) all recognize that rapid, far-reaching and unprecedented changes in all aspects of society are required to limit global warming and the resulting environmental threat posed by climate change, including the prompt phasing out of natural gas as a fuel for heating and cooling infrastructure in new buildings.
- D. Substitute electric heating and cooling infrastructure in new buildings fueled by less greenhouse gas intensive electricity is linked to significantly lower greenhouse gas emissions and is cost competitive because of the cost savings associated with all-electric designs that avoid new gas infrastructure.
- E. All-electric building design benefits the health, welfare, and resiliency of Berkeley and its residents.
- F. The most cost-effective time to integrate electrical infrastructure is during building construction because workers are already on-site, utility service upgrade costs are lower, permitting and administrative costs are lower, natural gas piping costs are avoided, and it is more cost-effective to include such systems in construction financing.
- G. It is the intent of the council to eliminate obsolete natural gas infrastructure and associated greenhouse gas emissions in new buildings where all-electric infrastructure can be most practicably integrated, thereby reducing the

environmental and health hazards produced by the consumption and transportation of fossil fuel.

19.84.020 Applicability.

- A. The requirements of this Chapter shall apply to all building permit applications for New Buildings proposed to be located in whole or in part within the City. However, it shall not apply to agencies that are not subject to City authority.
- B. The requirements of this Chapter shall not apply to the use of portable propane appliances for outdoor cooking and heating.

19.84.030 Definitions.

- A. "Greenhouse Gas Emissions" mean gases that trap heat in the atmosphere.
- B. "Gas Service" shall have the same meaning as specified in the Pacific Gas and Electric Company's 2017-2018 Electric & Gas Service Requirements (TD-7001M) Greenbook.
- C. "Natural Gas" shall have the same meaning as "Fuel Gas" as defined in section 208.0 of the California Plumbing Code.
- D. "Natural Gas Infrastructure" shall be defined as new natural gas piping and equipment associated with establishing new, or connecting to existing Gas Service, and appliances fueled by Natural Gas.
- E. "New Building" shall be defined as a new buildings or accessory buildings associated with a valid building permit application on or after the effective date of this chapter.

19.84.040 Prohibited Natural Gas Infrastructure in New Buildings

No building permit shall be issued for the construction of a New Building featuring the installation of new Natural Gas Infrastructure associated with new Gas Service or connection to existing Gas Service.

19.84.050 Exception.

Notwithstanding the requirements of this chapter and the Greenhouse Gas Emissions associated with natural Gas Service and infrastructure, the City Manager or their authorized representative may issue a building permit provided that a majority of the Mayor and Council finds that the permit serves the public interest.

19.84.060 Severability.

If any word, phrase, sentence, part, section, subsection, or other portion of this Chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the prescribed application thereof, shall be severable, and the remaining provisions of this Chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The City Council hereby declares that it would have passed this title, and each section, subsection, sentence, clause and phrase of this Chapter, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases is declared invalid or unconstitutional.

19.84.070 Effective date.

The provisions of this chapter shall become effective on [].